

Technique

Stand feet slightly apart with your torso straight, your hips bent at around 45° and your knees semi-flexed. Brace yourself. Hold a T-bar with an overhand grip (palms down). Pull the bar up to the abdomen keeping your elbows open throughout. At the same time you can straighten your body slightly, accompanying the movement. Because of the posture for this exercise, it is necessary to inhale just before you lower the weight, then hold your breath and exhale over the last third of the upward movement without releasing all of the air.

STRENGTH TRAINING

EXERCISES

With 300 videos Online

Óscar Morán

Edited by:

Marco Pila and Óscar Morán

Illustrations by:

Isabel Arechabala

Design and layout by:

Eledeeme



They call me Miguel de Cervantes Saavedra, and in 1605 I had printed a certain small volume which earned me great fame but little fortune.

The first year saw the fruit of my wit blown up into five editions each as false as thieves, which caused no small hurt to my honor and no less loss to my scant estate.

In those days, the use of intellectual property rights was less widespread than now.

Moral: Don't make pirate copies!



Pila Teleña

3rd edition, renewed and expanded

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C/ Pozo Nuevo, 12

28430 Alpedrete, Madrid (España)

Telf: 609 25 20 82

editorial.pilatelena@gmail.com

www.pilatelena.com

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Respect copyright! A lot of people have put a lot of work into this book and they deserve their reward.

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This book can be ordered in paper format directly from the publisher at
www.pilatelena.com.

This work has been translated into English, German, Italian, Portuguese and Chinese. Copies are available both on paper and in digital format for Android and iOS.



Dedicated to

Verónica Morán López
and
Inés Morán López,

My life.

Foreword

The usual routine in a gym is a combination of custom, individual experience, habit and pseudoscience, which does strength training few favors. Take a look around even the most prestigious facilities and you will immediately notice the lack of uniformity in individual training approaches and, still worse, the ignorance of proper form and technique displayed by practitioners.

In this book, the author explains that many of the false beliefs found in gyms and training facilities are founded on little more than myths and custom, or on individual experiences that cannot be generalized. From a biological standpoint, meanwhile, we should remind ourselves constantly that each individual has his or her own training thresholds, and what may be good for one person could lead to injury for another. It is a paradox that we exercise for the sake of our health, and yet many activities can actually be harmful if poorly executed due to ignorance or bad advice.

This book addresses the basic science to help readers understand the issues, but not in so much detail as to put off those who are looking for quick, effective solutions. It takes a rational approach based on both theory and the know-how gained from years of experience. The author's position is, then, that science helps when it is combined with hands-on expertise.

I find this book contains and clearly explains all of the information the reader could want or need. At the same time, it steers clear of myths and false beliefs about working out, taking a rational approach to the key issues involved in successful strength training.

I honestly believe that this book will prove easy to use for people working or training in gyms who want or need reliable workout guidance. Read it carefully and draw your own conclusions to train without being led astray by half-baked ideas and bad advice.

Francisco Javier Castejón Oliva

BSc in Physical Education and PhD in Educational Science.
Faculty of Education Science, Universidad Autónoma de Madrid (Spain)

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List of exercises

Names may vary

Chest

Free weight

1. Bench press (p. 24)
 - 1.2 ...close grip / hands together
 - 1.3 ...wide grip / hands apart
 - 1.4 ...close grip with elbows in
2. Incline bench press (p. 26)
 - 2.2 ...with dumbbells
 - 2.3 ...with dumbbells and outward twist
3. Decline bench press (p. 28)
 - 3.2 ...with dumbbells
 - 3.3 ...with dumbbells and outward twist
4. Dumbbell bench press (p. 30)
 - 4.2 ...with outward twist
 - 4.3 ...with palms facing in
5. Flat dumbbell flys (p. 32)
 - 5.2 ...incline
 - 5.3 ...decline
 - 5.4 ...crossover
6. Push-ups (p. 34)
 - 6.2 ...feet raised
 - 6.3 ...hands raised
 - 6.4 ...against a wall
 - 6.5 ...elbows straight

7. Bar dips (p. 36)
 - 7.2 ...with weights
 - 7.3 ...body straight
8. Bent-arm dumbbell pull-over (p. 38)
 - 8.2 ...with barbell
 - 8.3 ...crossed bench
 - 8.4 ...two hands alternating

Other exercises

9. Dumbbell twists (p. 40)
10. Rolling dumbbell push-ups (p. 41)
11. One-handed lateral barbell lift (p. 42)
12. Bench press with elbows straight (p. 43)
13. Floor dumbbell pull-over (p. 44)
14. Floor press (p. 45)

Machines

15. Bench press machine (p. 46)
 - 15.2 ...incline
 - 15.3 ...decline
 - 15.4 ...seated / vertical
16. Smith bench press (p. 48)
 - 16.2 ...incline
 - 16.3 ...decline
 - 16.4 ...elbows straight

17. Cable crossovers / Cable standing fly (p. 50)

17.2 ...press style

17.3 ...one-handed

17.4 ...one-handed with low cable

18. Flat cable lying flys (p. 52)

18.2 ...incline

18.3 ...press style

18.4 ...one-handed

19. Butterfly press (p. 54)

19.2 ...arms open

19.3 ...final movement only

19.4 ...high/low grip

Other exercises

20. Low cable pull-over (p. 56)

21. Assisted bar dips (p. 57)

Back

Free weight

1. Chins (p. 60)

1.2 ...behind the head

1.3 ...underhand grip / biceps

1.4 ...neutral grip with ladder / two hands alternating

1.5 ...bar to waist

1.6 ...low bar with feet on the ground

2. Bent-over barbell row (p. 62)

2.2 ...with dumbbells

2.3 ...underhand grip

2.4 ...dumbbells and narrow grip

2.5 ...against a bench

2.6 ...with T-bar

3. Long/T-bar row (p. 64)

3.2 ...open

3.3 ...one-arm

4. One-arm dumbbell row (p. 66)

4.2 ...open

4.3 ...standing

4.4 ...straight arm extensions

5. Dumbbell pull-over (p. 68)

5.2 ...alternating dumbbells

5.3 ...crossed bench

5.4 ...with barbell

Other exercises

6. One-arm lateral pull (p. 70)

7. Straight arm barbell extensions (p. 71)

Machines

8. Lat machine / pull-down machine (p. 72)

8.2 ...one-arm lever

8.3 ...one-handed with pause

9. Front cable pull-down (p. 74)

9.2 ...behind the head

9.3 ...inverted / underhand grip

9.4 ...narrow grip

9.5 ...lying down

9.6 ...neutral grip / T-bar

10. Seated cable row (p. 76)

10.2 ...open grip

10.3 ...high cable

10.4 ...one-arm

10.5 ...neutral grip / T-bar

11. Seated row machine (p. 78)

11.2 ...open

11.3 ...one-arm

12. Low cable row (p. 80)

12.2 ...high cable

12.3 ...one-arm

12.4 ...underhand grip

13. Standing cable pull-over (p. 82)

13.2 ...with rope

13.3 ...seated machine pull-over

14. Assisted chins machine (p. 84)

14.2 ...neutral grip

14.3 ...one-arm

15. One-arm lat machine (p. 86)

15.2 ...seated on the floor

15.3 ...seated sideways

Other exercises

16. Back cable crossover (p. 88)

17. Machine elbow adduction (p. 89)

18. Smith machine row (p. 90)

19. Vertical machine row (p. 91)

3. Front dumbbell press (p. 100)

3.2 ...incline bench

3.3 ...Arnold/Scott press

4. Lateral dumbbell (p. 102)

4.2 ...thumbs up

4.3 ...thumbs down

4.4 ...full raise

4.5 ...shoulder V press

5. One-arm lateral dumbbell raise (p.104)

5.2 ...incline

5.3 ...decline

5.4 ...lying

5.5 ...with bar

6. Dumbbell front raise (p. 106)

6.2 ...two arms

6.3 ...neutral / hammer grip

6.4 ...with bar

6.5 ...with disc/dumbbells

Shoulders

Free weight

1. Seated barbell military press (p. 96)

1.2 ...behind the head

1.3 ...narrow grip with elbows forward

2. Dumbbell bench press (p. 98)

2.2 ...standing

2.3 ...one-arm

2.4 ...two hands with pause

2.5 ...palms in

2.6 ...W press

7. Dumbbell rear lateral raise (p. 108)

7.2 ...seated

7.3 ...lying

7.4 ...one-arm lying

7.5 ...lying torso raise

8. Dumbbell lying lateral raise (p. 110)

8.2 ...elbow-in

8.3 ...straight arm extension

9. Upright barbell row (p. 112)

9.2 ...with dumbbells

9.3 ...barbell with forward raise

9.4 ...torso flexed

10. Dumbbell shoulder shrug (p. 114)

10.2 ...with twist

10.3 .. with bar

10.4 ...bent over

Other exercises

11. Side lying external rotation (p. 116)

12. Side lying inward rotation (p. 117)

13. Seated dumbbell hammer raise (p. 118)

14. Handstand push-ups (p. 119)

15. Bent-over front raise (p. 120)

16. Shoulder dip (p. 121)

17. Lying neck extension (p. 122)

18. Lying lateral neck flexion(p. 123)

19. Lying neck flexion (p. 124)

20. Lying head rotation (p. 125)

Machines

21. Machine shoulder press (p. 126)

21.2 ...front

21.3 ...seated with low cables

22. Smith machine military press (p. 128)

22.2 ...behind the head

22.3 ...narrow grip with elbows forward

23. Machine lateral raise (p. 130)

23.2 ...one-arm

23.3 ...incline

24. One-arm cross cable lateral raise (p. 132)

24.2 ...behind-the-back

24.3 ...two-arm crossover

25. One-arm front cable raise (p. 134)

25.2 ...two-arm with rope / bar

25.3 ...front facing

26. One-arm rear cable raise (p. 136)

26.2 ...low cable straight arm extension

26.3 ...kneeling

27. Seated machine rear lateral raise
(p. 138)

27.2 ...pec-deck

27.3 ...inverted pec-deck

28. Cable row upright (p. 140)

28.2 ...lying

28.3 ..smith machine

29. Cable shrug (p. 142)

29.2 ...smith machine

29.3 ...with front raise

29.4 ...one-arm

29.5 ...bent-over machine row

Other exercises

30. Lying side external cable rotation (p. 144)

31. Lying side internal cable rotation (p. 145)

Biceps

Free weight

1. Barbell curl (p. 148)

1.2 ...with EZ-bar

1.3 ...T-bar / roman bar

1.4 ...21s (three-part curl)

1.5 ...one-two

1.6 ...seated

2. Dumbbell curl (p. 150)

2.2 ...underhand grip

2.3 ...hammer grip

2.4 ...overhand grip

2.5 ...incline bench

3. Barbell preacher bench curl / scott curl (p. 152)

3.2 ...one-handed with dumbbell

3.3 ...one-arm with twist

3.4 ...hammer grip with dumbbell

4. Dumbbell concentration curl (p. 154)

4.2 ...standing

4.3 ...flat bench

Other exercises

5. Lying dumbbell curl (p. 156)

6. Biceps pull-ups (p. 157)

7. Zottman curl / twist curl (p. 158)

8. Prone curl on inclined bench (p. 159)

Machines

9. Machine curl (p. 160)

9.2 ...neutral / hammer grip

9.3 ...cable preacher curl

10. Cable curl (p. 162)

10.2 ...with rope

10.3 ...behind the back with one arm

10.4 ...lying

10.5 ...squatting

11. One-arm high cable curl (p. 164)

11.2 ...two arms

11.3 ...lying / vertical

11.4 ...lying cable crossover

Triceps

Free weight

1. Lying french press / lying barbell triceps extension (p. 168)

1.2 ...with Z-bar

1.3 ...triceps bar

1.4 ...inverted grip

1.5 ...behind the head

2. Dumbbell french press / dumbbell lying triceps extension (p. 170)

2.2 ...cross face

2.3 ...one-arm

2.4 ...side

3. Parallel bar dip (p. 172)

3.2 ...bench dips

3.3 ...between benches

3.4 ...between benches with weight

4. Triceps push-up (p. 174)

4.2 ...hand-over-hand

4.3 ...one-arm

4.4 ...against a wall

5. Dumbbell kick-back (p. 176)

5.2 ...overhand grip

5.3 ...underhand grip

5.4 ...with twist

5.5 ...two-arm

6. Narrow grip bench press (p. 178)

6.2 ...elbows-out

6.3 ...heavy with medium grip

7. Overhead dumbbell (p. 180)

7.2 ...with bar

7.3 ...one-arm

7.4 ...with two dumbbells

Machines

8. Cable push-down (p. 182)

8.2 ...one-arm

8.3 ...one-arm reverse

8.4 ...two-arm reverse

8.5 ...one-arm with neutral / hammer grip

09. Rope push-down (p. 184)

- 9.2 ...over-the-head
- 9.3 ...one-arm over the head
- 9.4 ...low cable kick-back
- 9.5 ...one-arm low cable lying extension

Other exercises

- 10. Machine extensions (p. 186)
- 11. Smith machine press with narrow grip (p. 187)
- 12. Horizontal / machine press (p. 188)
- 13. Assisted dip (p. 189)
- 14. Behind-the-back cable extension (p. 190)
- 15. Cable french press (p. 191)

Forearms

Free weight

- 1. Standing barbell wrist curl (p. 196)
 - 1.2 ...seated
 - 1.3 ...seated with dumbbells
- 2. Seated reverse barbell wrist curl (p. 198)
 - 2.2 ...with dumbbells
 - 2.3 ...with cable
- 3. Reverse barbell curl (p. 200)
 - 3.2 ...with triceps bar
 - 3.3 ...with dumbbells
- 4. Wrist roller (p. 202)
 - 4.2 ...back
 - 4.3 ...roller machine
- 5. Neutral dumbbell wrist curl (p. 204)
 - 5.2 ...lying ulnar flexion
 - 5.3 ...pronation/supination
- 6. Farmer's walk (p. 206)

Legs

Free weight

- 1. Barbell squat (p. 212)
 - 1.2 ...wide
 - 1.3 ...front
 - 1.4 ...single leg
 - 1.5 ...dumbbells
 - 1.6 ...hack
- 2. Step-up (p. 214)
 - 2.2 ...single leg
 - 2.3 ...side
 - 2.4 ...over-the-top
- 3. Lunge (p. 216)
 - 3.2 ...backward
 - 3.3 ...walking
 - 3.4 ...side
- 4. Deadlift (p. 218)
 - 4.2 ...dumbbells
 - 4.3 ...good morning
 - 4.4 ...raised
 - 4.5 ...hamstring raise
- 5. Standing calf raise (p. 220)
 - 5.2 ...one-leg
 - 5.3 ...donkey
 - 5.4 ...one-leg «1 to 15»
 - 5.5 ...with weights
- 6. Barbell seated calf raise (p. 222)
 - 6.2 ...dumbbells
 - 6.3 ...one-leg
- 7. Kick-back (p. 224)
 - 7.2 ...two-leg bench

7.3 ...half

7.4 ...hip bridge

8. Standing hip abduction (p. 226)

8.2 ...lying

8.3 ...lying bent-knee

9. Standing hip adduction (p. 228)

9.2 ...lying

9.3 ...lying splits

Other exercises

10. Calf extension (p. 230)

11. Sissy squat (p. 231)

11. Power clean (p. 232)

Machines

13. Sled squat (p. 234)

13.2 ...Smith machine, feet forward

13.3 ...Smith machine with feet back

13.4 ...Smith machine, front squat

14. Leg press (p. 236)

14.2 ...feet high

14.3 ...feet low

14.4 ...hack press

14.5 ...vertical

15. Machine leg extension (p. 238)

15.2 ...toes in

15.3 ...toes out

15.4 ...one-leg

16. Machine lying leg curl (p. 240)

16.2 ...toes in

16.3 ...toes out

16.4 ...one-leg

16.5 ...standing, one leg

16.6 ...seated

17. Machine standing calf raise (p. 242)

17.2 ...toes in

17.3 ...toes out

17.4 ...machine donkey

18. 45° calf press (p. 244)

18.2 ...lying calf press

18.3 ...knees bent

19. Seated calf raise (p. 246)

19.2 ...with moving foot

19.3 ...seated cable foot flexion

20. Seated hip adduction (p. 248)

20.2 ...incline seat

20.3 ...low cable

20.4 ...multi-pulley machine

21. Seated hip abduction (p. 250)

21.2 ...low cable

21.3 ...multi-pulley machine

22. Standing hip extension (p. 252)

22.2 ...low cable

22.3 ...lying, two legs

22.4 ...machine kick-back

23. Multi-pulley standing hip raise / hip flexion
(p. 254)

23.2 ...low cable

23.3 ...lying, low cable

Otros ejercicios

24. Smith machine split squat (p. 256)

25. Low cable prone leg extension (p. 257)

26. Cable lying leg curl (p. 258)

27. Cable lying hip adduction (p. 259)

28. Cable lying hip abduction (p. 260)

29. Cable calf raise (p. 261)

- 30. Seated cable external knee and hip rotation (p. 262)
- 31. Seated cable internal knee and hip rotation (p. 263)
- 7.3 ...with barbell
- 8. Lateral crunch (p. 280)
 - 8.2 ...with leg lift
 - 8.3 ...lying leg twists / abdominal pendulum

Abdominals and lower back

Free weight

- 1. Crunch (p. 266)
 - 1.2 ...with twist
 - 1.3 ...decline
 - 1.4 ...arms forward
- 2. Roman chair sit-up (p. 268)
 - 2.2 ...with twist
 - 2.3 ...weighted
 - 2.4 ...incline bench
 - 2.5 ...vertical bench
- 3. Lying leg raise (p. 270)
 - 3.2 ...jack knife
 - 3.3 ...flutter kick
- 4. Vertical leg raise (p. 272)
 - 4.2 ...hanging
 - 4.3 ...wall ladder
- 5. Seated leg tuck / jack knife crunch (p. 274)
 - 5.2 ...hands free
 - 5.3 ...touching your toes
- 6. Twists (p. 276)
 - 6.2 ...incline bench
 - 6.3 ...with barbell
 - 6.4 ...seated
- 7. Side bend (p. 278)
 - 7.2 ...with dumbbells

- 9. Deadlift (p. 282)
 - 9.2 ...with dumbbells
 - 9.3 ...good morning
- 10. Back extension (p. 284)
 - 10.2 ...weighted
 - 10.3 ...flat bench

Other exercises

- 11. Hanging sit-up (p. 286)
- 12. Inverted leg drop (p. 287)

Machines

- 13. Seated crunch machine (p. 288)
 - 13.2 ...low ab machine
 - 13.3 ...seated bench press machine
- 14. Standing cable crunch (p. 290)
 - 14.2 ...kneeling
 - 14.3 ...side crunch
- 15. Twister (p. 292)
 - 15.2 ...seated
 - 15.3 ...cable
- 16. Seated-row back extension (p. 294)
 - 16.2 ...lower back machine
 - 16.3 ...deadweight with low cable
 - 16.4 ...smith machine deadlift

Other exercises

- 17. Cable sit-up (p. 296)
- 18. Low back extension (p. 297)

Introduction

Have you ever wondered what you have that will stay with you for the rest of your life? Maybe you've already got it, but here's another clue: you are completely dependent on it, and though it can make you feel great, it can also be a terrible burden if you treat it wrong. That's right—it's your body.

«You are what you eat» as the saying goes, but it is only true in part. What really makes the difference, aside from the energy and structural nutrients we obtain from our diet, is the use we make of our bodies. Regardless what you may have read or heard, it is beyond question today that a fit body is far more likely to be a healthy body, and its owner will be ideally placed to enjoy all aspects of life. Physical attractiveness also counts for a lot—we all want to look and feel good. Thirdly and finally, a trained body is not just for sport but for all of our day-to-day activities.

Knowing this, what kind of exercise should you choose? I could recommend two at least: any sport you like and strength training. In the thirty years I have been training both myself and others, I have never heard anybody argue seriously against the proposition that strength training, supplemented by moderate aerobic exercise and stretching, is the most complete form of physical exercise. No other discipline works out the whole of our musculature so effectively and scientifically. I recommend a second sport («anything you like») simply to encourage you to do any other physical activity you enjoy, for sport is also about recreation and fun.

However, I cannot promise you unalloyed enjoyment and fun in the practice of strength training: though many consider it the highpoint of the day, training generally involves moments of strenuous physical exertion, sometimes lasting seconds, sometimes minutes at a time. There is no other way if you really want to develop your muscles. If what you are looking for is merely light training to stay in shape, your trips to the gym will be less taxing, however.

This work is intended both as a handbook for the sports enthusiast and as scientific contribution to the theory and practice of strength training aimed at trainers and practitioners interested in the techniques and effects of the numerous strength training exercises commonly practiced in modern gyms. Whether you are a beginner or have been training all your life, you will find much to learn here.

Enjoy.

*Beginners sometimes make the mistake of trying to reach their limits.
There are no limits!*

www.oscarmoran.es

How to use this book

Any strength training enthusiast will be keen to learn how to work out and do individual exercises to the best effect to achieve their goals. This encyclopedia of Strength Training Exercises is a reference work that will be equally useful to both beginners and experienced practitioners, to enthusiasts and to professional personal trainers alike. Beginners can learn about exercise technique and the muscles involved in each movement by studying the illustrations and the accompanying brief texts. Trainers and advanced practitioners may also want to explore the variant exercises presented and examine the origins and insertions of the main muscles described at the beginning of each chapter. However, exercises using elastic training bands designed to imitate the resistance offered by a weight emission have been omitted, because the main points described here would also apply. Finally, let us note that the majority of the descriptions provided refer to «open chain» kinetic exercises that move the terminal (distal) segment of each joint (e.g. biceps curl).

All of the exercises are accompanied by illustrations showing the movements required. These drawings were made from life by an artist who is an expert in human anatomy, using experienced professional models working out under the instructions and supervision of the author. The text not only describes proper technique but also lists the muscles worked in each variant, as well as explaining how to breathe and common mistakes to avoid. It also provides numerous very useful tips.

This is a work of reference, so you can start reading on any page. However, more information is provided for the basic exercises, which are those described first in each case.

How to use the exercise pages

- **Name.** Usual name and number of the exercise.
- **Illustration.** Position, basic exercise technique and muscles involved, illustrated in an anatomical sketch.
- **Muscles involved.** The muscles involved are listed in order of importance and/or exertion required in the exercise. Muscles that are only peripherally involved are omitted.
- **Execution.** Stance or posture, explanation of the movement required and proper breathing technique.
- **Comments.** Clarifications, tips and common pitfalls.
- **Variations.** This section explains variations on the basic exercise, either using the same muscle group or, less often, the same posture or movement. In these cases, only the main muscles worked are mentioned, because the secondary muscles are generally the same as in the basic exercise.
- **Introduction to muscle biomechanics.** Brief anatomical study of the origin, insertion and functions of the main muscles (size, strength and role).

The «OTHER EXERCISES» described separately at the end of each chapter are either very unusual or offer scant benefits or scarcely differ from the basic exercises.



Just click on the icon to open a video in the eBook. In the paper edition, you need to look up and scan the QR code at the end of the book.

Illustration

Name

Muscles involved

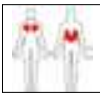
Common mistakes

8

Chest
Free weights

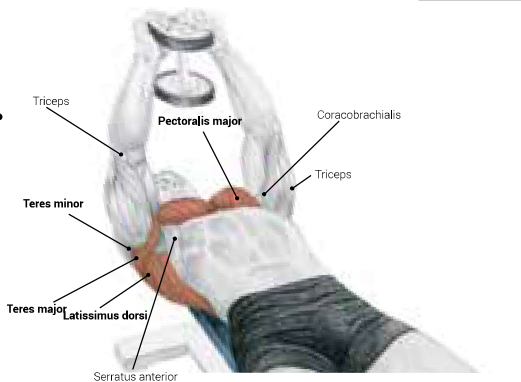
Bent-arm dumbbell

pull-over



Muscles involved

Main muscles: Latissimus dorsi, teres, pectoralis major
Secondary muscles: Serratus anterior, coracobrachialis, triceps, rhomboids
Antagonists: pectoralis major, deltoids (anterior), triceps



Technique

Lie back on a bench with your head just over the edge. Hold the dumbbell vertically with the bar running through the triangle formed by the thumbs and index fingers. Keeping your elbows semi-flexed throughout, slowly lower the weight above and behind your head at the same time as you inhale deeply. You should feel a stretch in your pectoral muscles and expansion of the chest. Bring the dumbbell back up to the vertical above your eyes as your pectoral muscle contracts. Exhale on completing the lift.

Comments

This is an exercise for experienced practitioners, which not only works the pectorals but also the dorsal and adjacent muscles. In theory, it «expands» the chest (see Ex. 5 «Dorsal Group»), and it has traditionally been used for this purpose and to improve flexibility. It is therefore important to breathe in deeply. The muscles involved are very strong and leverage is favorable, so it is possible to move considerable weights. This is normally unnecessary, however, and can lead to poor execution and injury. The dumbbell pull-over should not be used to achieve hypertrophy of the pectoral muscle. Other more specific exercises exist for this purpose. Finally, we may note that the use of a barbell or dumbbells does not differentiate between a chest and a back exercise, as is sometimes claimed.

38

Execution

Comments

Main Exercise

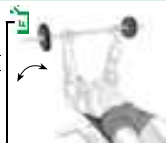


Common mistakes: too much weight; incorrect breathing; too short or too long a movement; flexing the elbow (triceps).

Variants

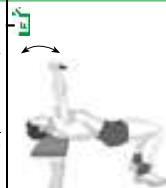
8.2 ... with barbell

Muscles involved: pectoralis major, latissimus dorsi, teres major.
Technique. Take a short barbell, preferably of the EZ-type (not straight but curved in an ergonomic «W» shape) with an over-hand grip and perform the same movement as with the dumbbell. The variant is not as safe as the basic exercise as there is a risk of losing balance.



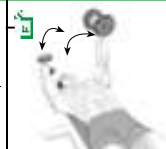
8.3 ... crossed bench

Muscles involved: pectoralis major, latissimus dorsi, teres major.
Technique. The only difference in this exercise is that your butt and your head will be left free and your torso will rest on your shoulders on a bench set crosswise to the body. You need to find your balance before beginning the exercise with the dumbbell. You can lower your hips slightly as you lower the weight to allow a longer stretch. Begin with the dumbbell on the bench to one side of your head (or seek assistance from a spotter). This variant, popularized by Arnold Schwarzenegger, is more suitable for advanced practitioners.



8.4 ... two hands alternating

Muscles involved: pectoralis major, latissimus dorsi, teres major.
Technique. The technique is the same as in the basic exercise (with the bench in line or crosswise), but two dumbbells are used alternately. This allows independent localization of the muscles worked, although the variant is more difficult technically. In general terms, it is no better than the conventional exercise.



Mental focus on the muscle worked is key to performing exercises properly, not only to avoid accidents but also to stimulate the area you wish to train. If concentration is lacking, other muscles may take over to some extent from the one you are supposedly working out.

39

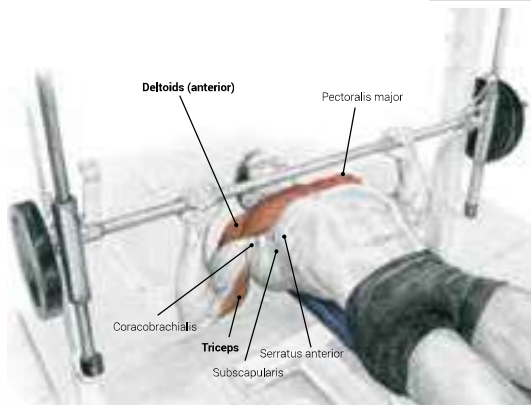
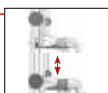
Variants



Just click on the icon to open a video in the eBook. In the paper edition, you need to look up and scan the QR code at the end of the book.

**Muscles involved**

Main muscles. Pectoralis major, triceps, deltoids (anterior)
Secondary muscles. Coracobrachialis, serratus anterior, subscapularis
Antagonists. Latissimus dorsi, biceps, deltoids (posterior)

**Technique**

Lie flat on the bench of the multi-power or Smith machine (with lateral guides) with your feet on the ground if the bench is low, or on a step. Grip the bar vertically above your chest with your hands a little beyond shoulder-width apart. Always keep your thumb below the bar. Take the bar off its support, twist carefully with your hands so that the machine will not lock as you bring the bar down to touch the mid-part of your chest, and raise it again. Keep your elbows perpendicular to and away from your body. Breathe in for the first half of the movement as you lower the bar and out as you finish the raise.

Comments

Almost all of the comments on the «machine bench press» (Ex. 14) apply to this exercise, which is very similar. The main advantage of the Smith machine is that it allows you to take the weight from above, stop at any time in the series (by twisting the bar to lock the travel) and vary the incline of the bench. Good models of this machine also have a lock to prevent the bar from coming down further than desired, which serves as both a guide and a safety feature.



Common mistakes: poor regulation of posture on the machine; bouncing the bar off the chest; locking the elbows at the top of the lift; unequal exertion of force in each arm; incorrect positioning of the thumb together with the rest of the fingers.

Variants**16.2 ... incline**

Muscles involved: pectoralis major (clavicular area), triceps, deltoids (anterior).

Technique. The movement is the same as in the basic exercise, but the bench is set at an incline of around 30 to 45°. As in the case of the incline press with free weight (Ex. 2), the pectoral muscle remains in demand, but the work is shifted to the upper (clavicular) fibers and the shoulders.

**16.3 ... decline**

Muscles involved: pectoralis major (lower portion), triceps, deltoids (anterior).

Technique. The movement is the same as in the basic exercise, but the bench is set at a decline of around 30°. The pectoral work is more intense for the lower muscle fibers. Working out with your head below the level of the body has serious disadvantages, as described in «decline bench press» with free weight (Ex. 3).

**16.4 ... elbows straight**

Muscles involved: serratus, subscapularis, deltoid (anterior), pectoral muscles, deltoids (anterior).

Technique. The position is the same as for the Smith bench press (or decline bench press with barbell or dumbbells), but the elbows are not flexed at any time and the arms remain almost completely extended. The shoulder movement is only an inch or so, but it is enough to work out the serratus and subscapularis muscles. The weight used should be much lighter than in the conventional press.

As explained above, this variant provides a supplementary exercise for a complete pectoral work-out, and it can also be used in the rehabilitation of «winged scapula» and similar problems (due to weakness or atrophy of the subscapularis). The advantage of the Smith machine is that it removes the problem of balancing the barbell or dumbbells, which can affect the success of the workout, which is tremendously specific.



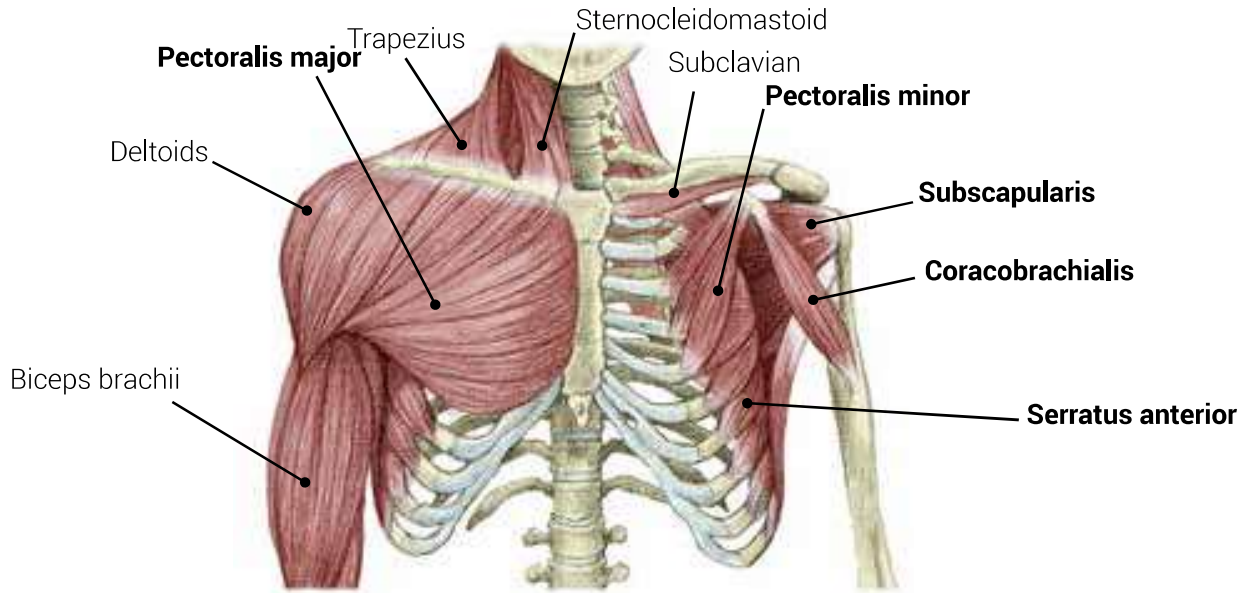
You should treat this book as a double page spread.



The presentation is vertical in the e-book format, so that the basic exercise will be found on the first page followed on the next page by the different variants

Introduction to the biomechanics of the main muscles

Muscles with insertion in the humerus



Pectoralis major (anterior, superficial)

Origin: clavicle (clavicular head: arising from the anterior surface of the sternal half); ribs and sternal membrane (sterno-costal head: arising from the rib-cartilage); rectus abdominis (abdominal head: arising from the anterior lamina of the abdominal wall).

Insertion: humerus (crest of the greater tubercle).

Main functions: anteversion of the arm if extended (abduction); adduction and medial rotation. The sterno-costal and abdominal parts of the muscle lower and raise the shoulder. It also plays an ancillary role in breathing (arms still).

Coracobrachialis (anterior, deep)

See «SHOULDERS».

Observations: the pectoralis major is in fact formed by two muscles lying on the upper torso under the breast. Each is a broad, flat muscle in the shape of a fan which covers the ribs. Delimited by the axilla (underarm), it is easy to feel. The muscle may be sub-divided into the clavicular (upper) portion, the sternocostal (middle) portion and the abdominal (lower portion). In practice, all three portions work together synergetically in most movements.

Because its insertion takes up a large part of the upper torso, this muscle performs a variety of functions, the best known of which is to move the arms forward (anteversion) away from the body (as in the Bench Press exercise). However, a range of different exercises are needed in order to exercise it fully.

The pectoralis major is one of the most striking muscles in the human body, to such an extent in fact that it is often overtrained compared to the back muscles. Combined with overtraining of the abdomen (no less common), this can eventually produce a kyphotic posture (i.e. outward

curvature of the spinal column in the thoracic region, causing a rounded back). This problem is easily prevented by training the whole body harmoniously and by regular stretching. Meanwhile, it is rarely necessary to exercise the lower or abdominal portion of the pectoralis major, except in professional bodybuilding. There is a widespread, though unfounded, belief that inverted press exercises help to «delineate» this area. The reality is that conventional exercises are quite enough to work out the abdominal portion, and any «delineation» needed can be achieved through diet and aerobics.

Subscapularis (anterior, deep)

Origin: scapula (subscapular fossa).

Insertion: humerus (lesser tubercle and the proximal part of the crest).

Main functions: medial rotation of the arm.

Observations: the subscapularis is a very deep, flat fan-shaped muscle located in front of the scapula. Its main function is stabilization rather than movement, although it plays a part in the medial rotation of the arm due to the disposition of the muscle fibers.

Biceps brachii (anterior, superficial)

See «BICEPS».

— Muscles without insertion in the humerus —

Pectoralis minor (anterior, deep)

Origin: ribs (3rd to 5th).

Insertion: scapula (coracoid process).

Main functions: Rotation and lowering of the scapula.

Observations: the pectoralis minor lies under the pectoralis major, and as its name suggests, it is not so strong. In fact, it has a very different function, since it is not inserted in the arm, although it is involved in most arm movements, either as synergist or stabilizer.

Serratus anterior (anterior, deep)

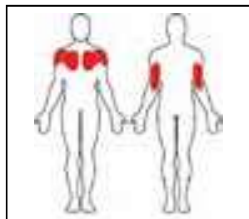
Origin: ribs (generally the first 9).

Insertion: scapula (medial margin, from the upper to the lower angle).

Main functions: main functions: anteversion of the arm, thoracic stabilization of the scapula; downward and lateral rotation (lower part), upward rotation (upper part); secondary elevation of the ribs (ancillary function in breathing).

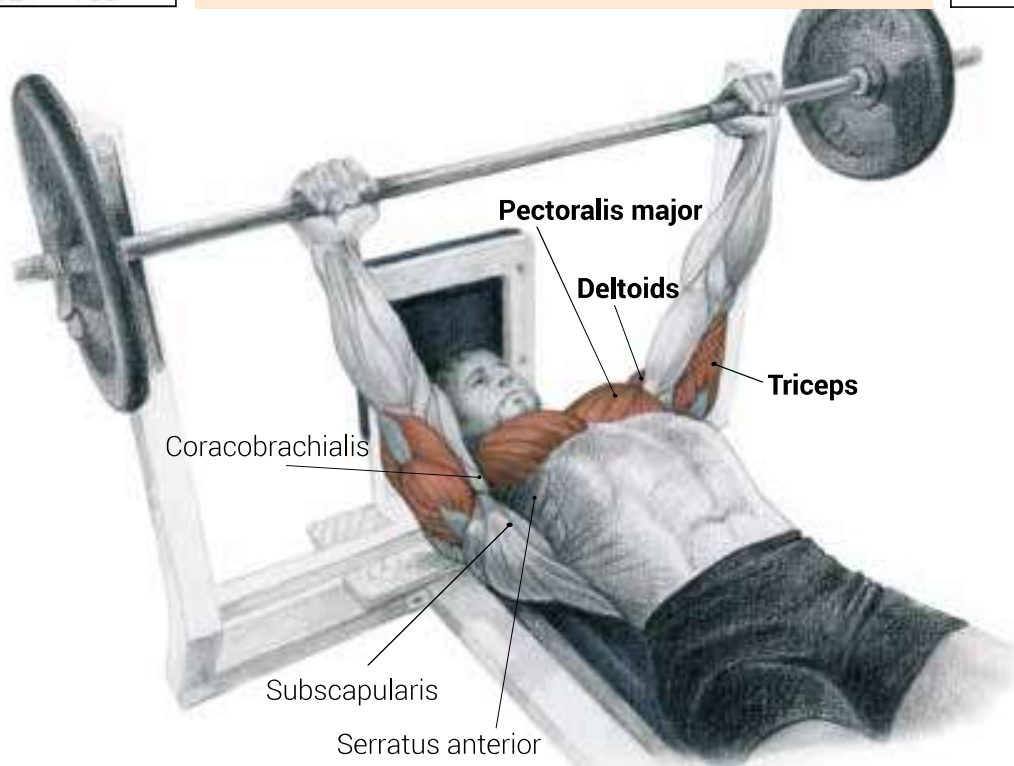
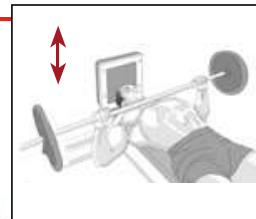
Observations: the serratus is similar to the pectoralis major both in its position and the orientation of the muscle fibers. It too originates from the ribs but in the middle portion of the muscle (further from the sternum), and unlike the pectoralis major, it does not insert in the humerus but in the scapula. Its main function is therefore to draw the scapula forwards, as in the bench press and other movements involving anteversion of the arm. This book describes various more specific exercises to work out the serratus anterior muscle.

Problems with the serratus will be felt in abduction above 90° to the body and the condition known as «winged scapula» (i.e. displacement of the bone). In this regard, we may note that winged scapula also occurs in the case of problems with the rhomboid muscles, but it is not accompanied by any difficulty in raising and extending the arms.



Muscles involved

Main muscles. Pectoralis major, triceps, deltoids (anterior)
Secondary muscles. Coracobrachialis, serratus anterior, subscapularis
Antagonists. Latissimus dorsi, biceps, deltoids (posterior)



Technique

Lie flat on the bench (face up) supporting your head and back, and with your feet firmly planted on the ground. Position yourself and grasp the bar, which should be directly above your eyes, with a symmetrical overhand grip (pronation), hands slightly beyond shoulder-width apart, preferably keeping your thumb below the bar. Keep your wrists steady and straight. Inhale before taking the bar down from its supports and bring it into line with your chest. Lower your elbows away from the torso until the bar is just above the middle part of your chest, and then raise it vertically. Breathe in as begin to you lower the bar and out as you complete the lift (not before), without expelling all of the air in your lungs.

Comments

This is a basic exercise. It is heavy but simple, although it requires concentration and often enough assistance.

If the bench is high, it is a good idea to position the feet on a step to avoid excessive curvature of the lower spine.

You may arch your back (which provides greater power) to complete a set, but only if you are in difficulties with the last rep and you do not have the help of a spotter. Strictly speaking, this is cheating and you should avoid it under normal conditions.

Variants outside the vertical line when lowering the bar (e.g. towards the shoulders or the abdomen) have the potential to cause injury and are not recommended, and in any case they do not provide any additional benefits. Another error is to lower the bar too far; it should not touch, and still less rebound from, the sternum.

The bench press is an excellent exercise, but you should not underestimate its risks. It is actually quite hazardous, insofar as any accidents can have very serious consequences.



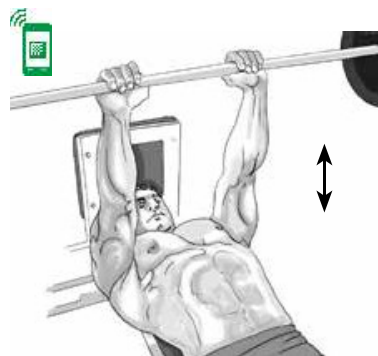
Common mistakes: arching the back (this means your feet are placed too low); bouncing the bar off the chest (risk of injury to the sternum and ribs); lowering the bar towards the neck or abdomen; excessive or insufficient weight; locking the elbows at the apex of the movement; moving the wrists, feet, back or head.

Variants

1.2 ... close grip / hands together

Muscles involved: triceps, pectorals and deltoids (anterior)

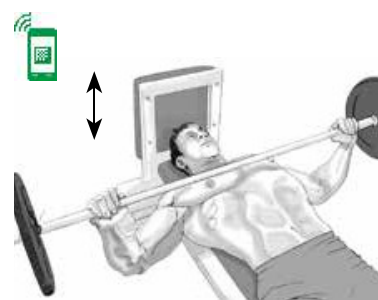
Technique. The movement is the same, but the hands grip the bar closer together, only about 20 cm apart. By changing the grip, the triceps takes over a part of the strain from the pectoral muscle, which does less work. You should use less weight than in the basic exercise, and you should avoid this variant if you have problems with your wrists.



1.3 ... wide grip / hands apart

Muscles involved: pectorals, deltoids (anterior) and triceps

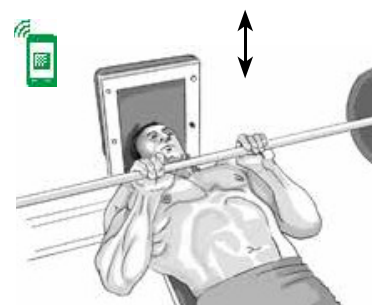
Technique. The only difference is the greater separation between the hands, which must be kept wider apart than the shoulders. This shifts a part of the effort required onto the deltoids, taking some of the strain off the triceps. Clearly, the vertical movement will be somewhat shorter. In theory, this variant helps expand the chest (see Ex. 5). It helps to inhale deeply as you lower the bar. The downside of this very open grip is that the strain experienced by on the shoulders can cause injury, for example to the rotator cuff or the shoulder joint. Wide grips are not recommended for these reasons.



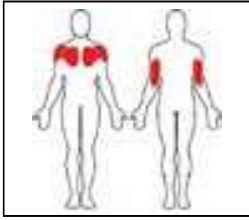
1.4 ... close grip with elbows in

Muscles involved: deltoids (anterior), triceps and pectorals

Technique. The technique is the same as the close grip press, but in this case the elbows stay close to the torso as you bring the bar down towards the lower ribs. This shifts a part of the work done by the pectoral muscle onto the shoulder and triceps. This is in fact a heavy variant of the «French press» (see Ex. 1, triceps).



Imbalances in muscle tone between the anterior and posterior muscles of the torso can cause kyphosis (rounding of the upper back due to outward curvature of the spinal column), among other problems. This means your workouts should be evenly spread to include both the front and back regions, as well as your sides.

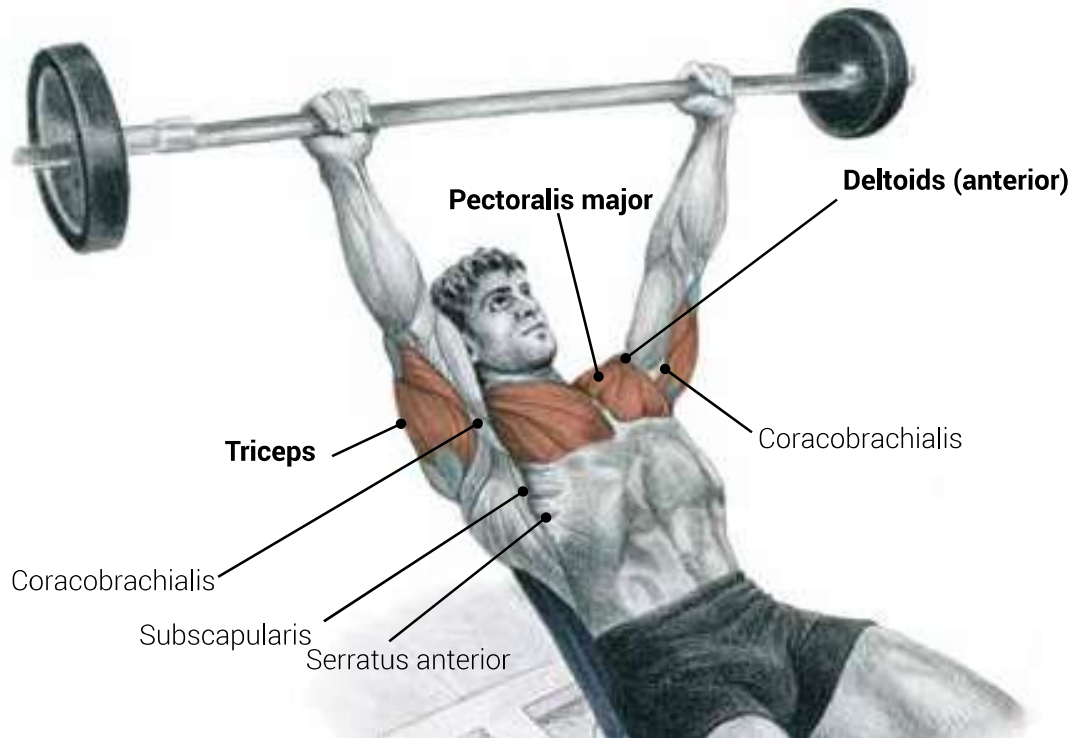
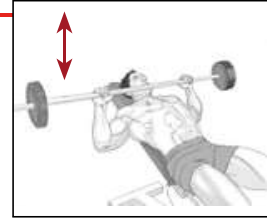


Muscles involved

Main muscles. Pectoralis major (clavicular area), triceps, deltoids (anterior)

Secondary muscles. Deltoids (medial), coracobrachialis, serratus anterior, subscapularis

Antagonists. Latissimus dorsi, biceps, deltoids (posterior)



Technique

Lie back on a bench set at an incline of between 30 and 45°, placing your feet firmly on the ground and with your back and head supported. Grasp the bar, which should be directly above the forehead, with an overhand grip so that your palms face your feet (pronation). The forearms should move perpendicular to the ground, and your hands should be a little more than shoulder-width apart.

Breathe in before lifting the bar off its support, and lower it until just touching the upper part of your chest and then raise it again vertically. Keep your elbows away from your body. Exhale on completing the lift.

Comments

The bench can be set at an inclination of up to 60 or 70°, which increases the work done by the upper part of the pectoralis major, but at the cost of shifting much of the effort to the shoulders. Also, the external rotation of the arms is greater, which is not entirely recommendable when lifting heavy weights with involvement of the shoulder joint.

The upper chest should not be ignored in your workouts, but it usually receives less attention than the lower part. Contrary to popular belief, however, it does not help women prevent or correct sagging breasts, though the exercise is no less useful for all that.

The medial and external region of the pectoral muscle is activated by horizontal adduction of the arm against resistance (supine bench press exercises), but the upper and lower portions will benefit from differentiated work.



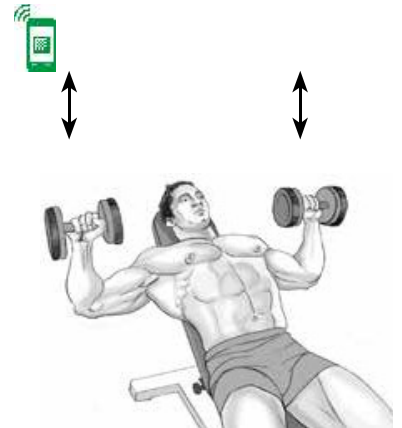
Common mistakes: setting the bench at too much of an incline (over 50°); arching the back; bouncing the bar off the chest; locking the elbows at the apex of the movement.

Variants

2.2 ... with dumbbells

Muscles involved: pectoralis major (clavicular area), triceps, deltoids (anterior)

Technique. Set the bench to the same position as described for the basic exercise and lie back with the dumbbells on your knees or on the floor. The lift is the same as using a bar, but you can «close» towards the end of the movement, bringing the weights closer together. In theory, this provides a proximal workout (i.e. close to the sternum). However, the difference is not great, because the whole muscle in any case contracts, given that there are no insertions between the medial and external area. That said, the movement is more natural. Doing the incline bench press with dumbbells allows you to lower the weight further, which helps flexibility, although you should be careful to reduce the load to prevent injury. The main disadvantage is that the weight used is normally less than using a bar because of the movements needed to get into position starting from a low position (rather than lifting the weight down from supports). Also, there is a greater risk of instability towards the end of each series due to muscle exhaustion (often affecting the triceps).



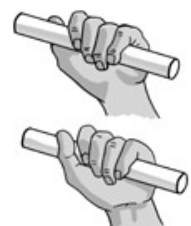
2.3 ... with dumbbells and outward twist

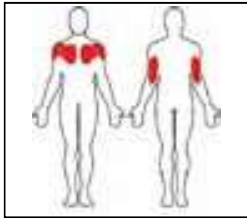
Muscles involved: pectoralis major (clavicular area), triceps, deltoids (anterior and exterior)

Technique. Basically the same as for the incline press with dumbbells. In this case, however, you twist the thumbs outward as you raise the weights, producing an external rotation of the arm. The movement must be made by the whole arm and not just the forearm (supination). The twist is intended to increase the final contraction of the sternal part of the muscle, though it is not very effective because it is usually only the forearm that rotates, and then only when the weight is already up. The movement is therefore not caused by the pectoral muscle, the action of which in any case involves medial and not external rotation. This exercise is not recommended for very heavy sets or beginners. In general, twist variants of this kind are non-essential, because they offer little or no advantage over the principal dumbbell and bar exercises.



Wrist movements under strain can damage the small bones and muscles in the joint, and cause sometimes injury to the forearm. A grip with the thumb in opposition to the fingers («clasping» the bar) is more natural and, above all, safer for any kind of press.



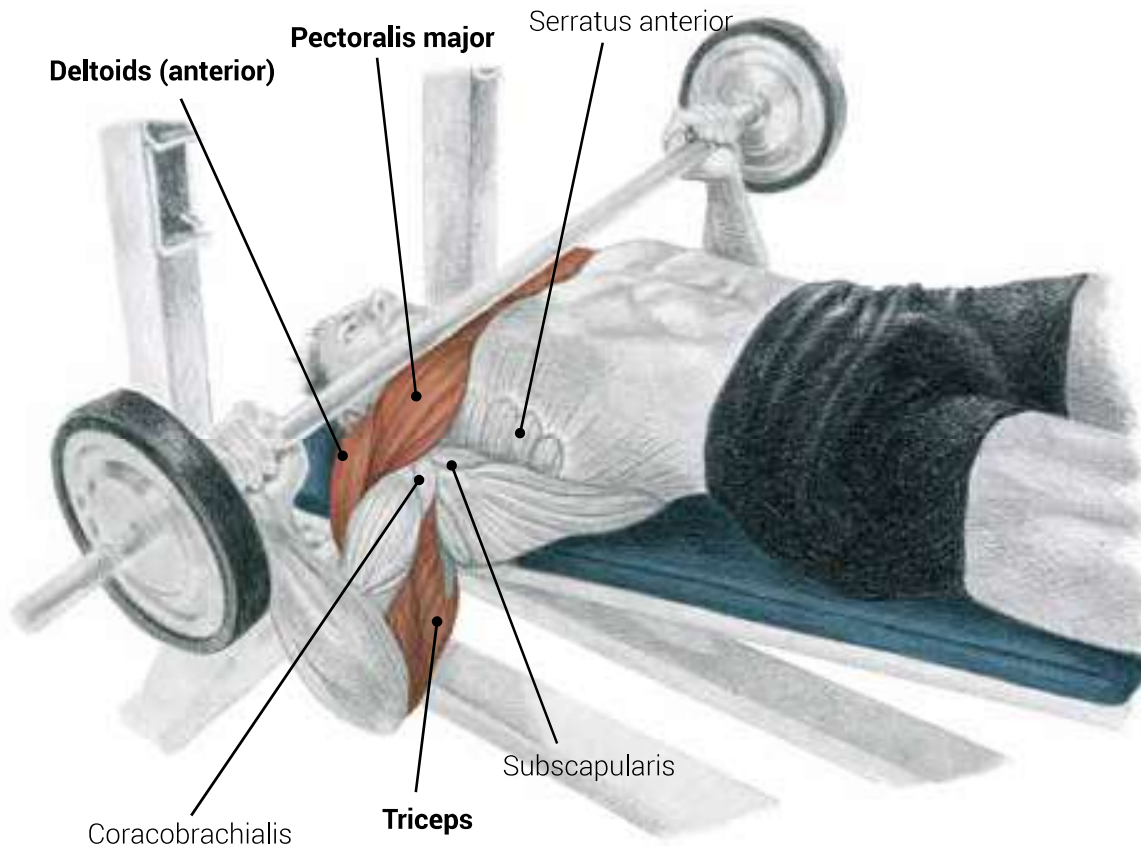
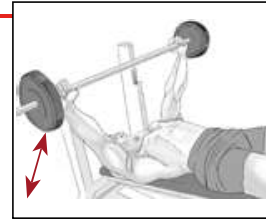


Muscles involved

Main muscles. Pectoralis major (lower part), triceps, deltoids (anterior)

Secondary muscles. Pectoralis minor, coracobrachialis, serratus anterior, subscapularis

Antagonists. Latissimus dorsi, biceps, deltoids (posterior)



Technique

Lie head down on a decline bench (between 20 and 30°) with your legs restrained. Grasp the bar, which should be directly above your eyes, with an overhand grip (pronation). Inhale before lifting the bar down from its supports and lower it until just touching your chest. Raise the bar vertically. Your forearms should move perpendicular to the ground (see Ex. 1 and 2), and you should keep your elbows away from your torso, as in the previous exercises. Exhale on completing the lift.

Comments

This unfortunate exercise is no longer widely used (or at least it shouldn't be), because it works out an area of the chest (the lower portion) that is easily trained using basic exercises. Moreover, it is not advisable to work out intensely for prolonged periods with the head below the level of the heart. This is because the human body is not designed for effort in an inverted posture, which can cause circulatory problems, fainting and other complications. In any event, the bench should never be set at a decline of more than about 35°, and you should always seek help to do this exercise. Whatever some authors and trainers may say, this variant does not «trim» the lower pectoral muscle, an effect that can best be achieved through normal training of the chest muscles, diet and aerobic exercise.



Common mistakes: excessive decline of the bench, too much weight and unwarranted repetition of the exercise.

Variants

3.2 ... with dumbbells

Muscles involved: pectoralis major (lower part), triceps, deltoids (anterior)

Technique. The position is the same as for the barbell press, but you will need to lie back while holding the dumbbells with your arms flexed, unless you are being helped by a spotter who can pass you the weights. In addition to the drawbacks mentioned above, using dumbbells for this exercise obliges you to manage your weights in this rather unnatural posture at the beginning and end of each set, although it does allow a longer movement. In this light, it is advisable not to do heavy sets and to seek assistance.

Picking up and putting down the weights involves some risk to the shoulders, not to mention the chance of damaging the apparatus.



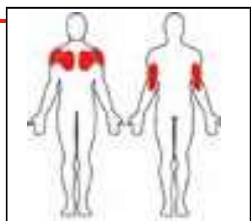
3.3 ... with dumbbells and outward twist

Muscles involved: pectoralis major (lower part), triceps, deltoids (anterior)

Technique. Basically, the technique is the same as for the decline press with dumbbells but with an outward twist of the thumbs. In theory, this twist produces a more intense contraction in the lower sternal part of the muscle, although this is not actually very effective (see Exercise 2.3). This exercise is not recommended for very heavy sets.



Sooner or later, any strength training enthusiast must learn a little anatomy and physiology. If not, how can you know that you are working out right.

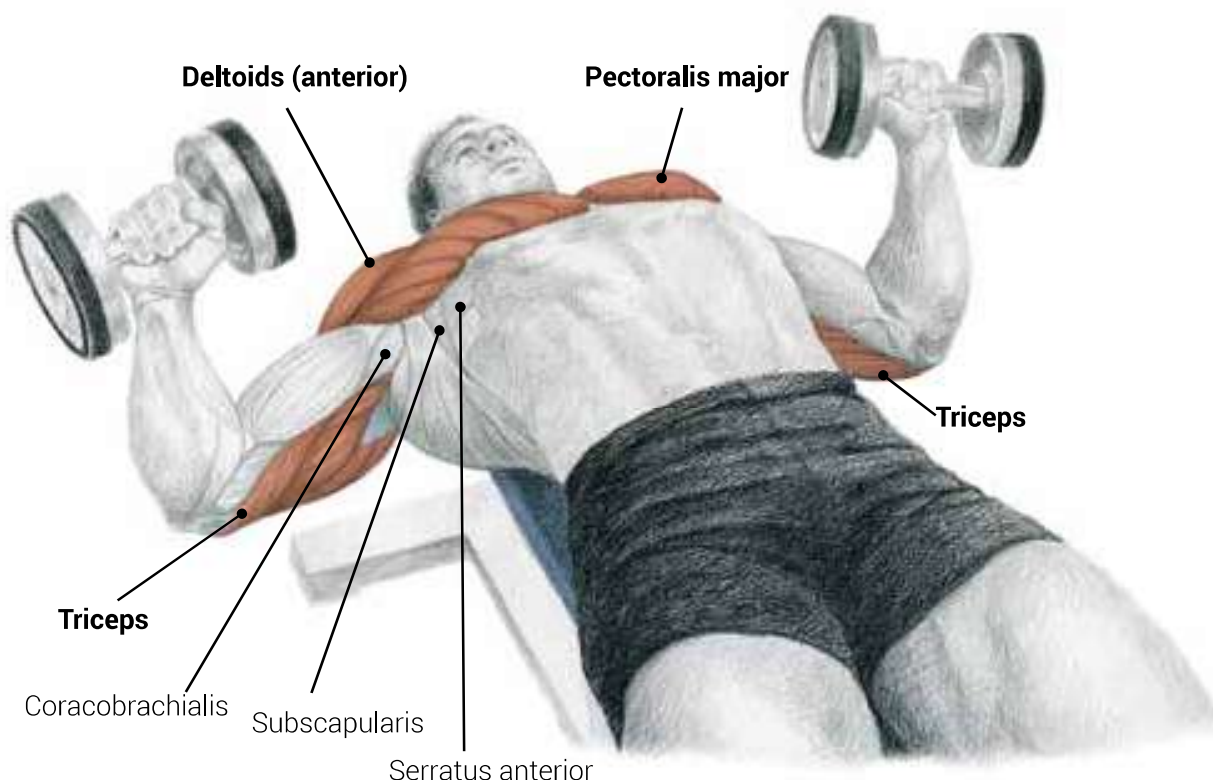


Muscles involved

Main muscles. Pectoralis major, triceps, deltoids (anterior)

Secondary muscles. Coracobrachialis, serratus anterior, subscapularis

Antagonists. Latissimus dorsi, biceps, deltoids (posterior)



Technique

Lie flat (face up) with your head and back supported by the bench and your feet on the ground if the bench is low, or on a step. Hold the dumbbells vertically above the chest, keeping them slightly apart. Like in the barbell press, the forearms should move perpendicular to the ground. Breathe in as you begin to lower the weights down to the level of your chest (depending on flexibility) and then raise them vertically and towards the center. Keep your elbows perpendicular to and away from your body. Exhale on completing the lift.

Comments

As in other exercises, dumbbells allow longer travel in the movement, although there is no need to lower your arms below the level of your chest. It is a good idea to seek the help of a spotter to take and hand off the dumbbells at the beginning and end of each set. One way to start is to hold the dumbbells on your knees and lie back with your arms flexed, lifting with help from your spotter. At the end of the set place your hands in the neutral position, flexing the elbows, raise your knees and bring the dumbbells down onto them at the same time as you sit up (don't let them fall to your sides while you are lying down, as you could injure your shoulders and/or damage the apparatus). Some studies suggest that the sternal area of the pectoral muscle works harder when you use dumbbells, but there can in fact be little difference because there are no insertions between the medial and the external area.



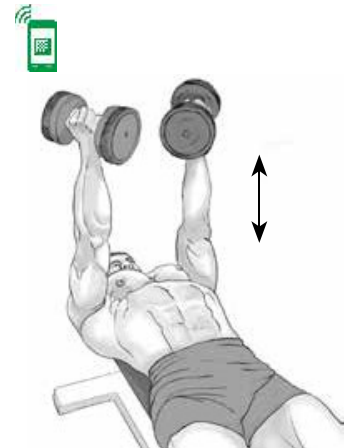
Common mistakes: lowering the weight too far; picking up and putting down the dumbbells incorrectly at the beginning and end of each set; and clashing the dumbbells together at the top of the movement.

Variants

4.2 ... with outward twist

Muscles involved: pectoralis major, triceps, deltoids (anterior)

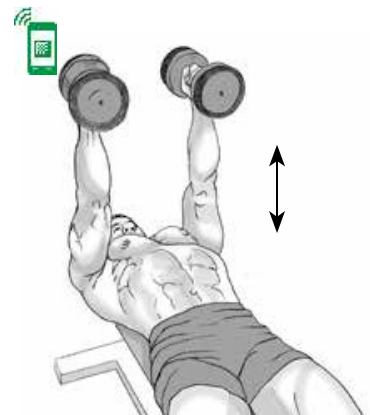
Technique. Essentially, this is the same as the basic exercise, but it includes twisting the thumbs outward and the pinkies inward so that they come closer together in the final part of the movement. This twist is supposed to provide a more intense final contraction in the sternal part of the muscle. In reality, it usually only involves the forearm, and because the pectoral muscle is hardly working against gravity by the end of the lift, the movement does not really achieve its intended purpose (see Exercise 2.3).



4.3 ... with palms facing in

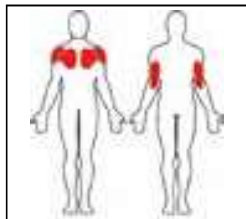
Muscles involved: pectoralis major, deltoids, triceps

Technique. The technique is the same as the basic exercise, but the hands face each other (knuckles outward) throughout the course of the movement. In theory, this twist will cause a greater expansion of the thorax and enhance contraction of the muscle. The exercise is actually pretty much identical to the basic dumbbell bench press, however, because most people make the twist only with the forearm and not with the whole of the arm, which would not affect the pectoral muscle (see «insertions» in the appendix on muscle movements).



People commonly imagine they are doing «flys» when in fact what they are doing is a «palms-in press». At the level of the pectoral muscles, practically nothing changes. This is because it is not possible to load up with so much weight in basic «flys» (the only variant that really deserves the name). If you have to choose a movement that will work the muscle intensively, the barbell or dumbbell press is better than dumbbell flys.



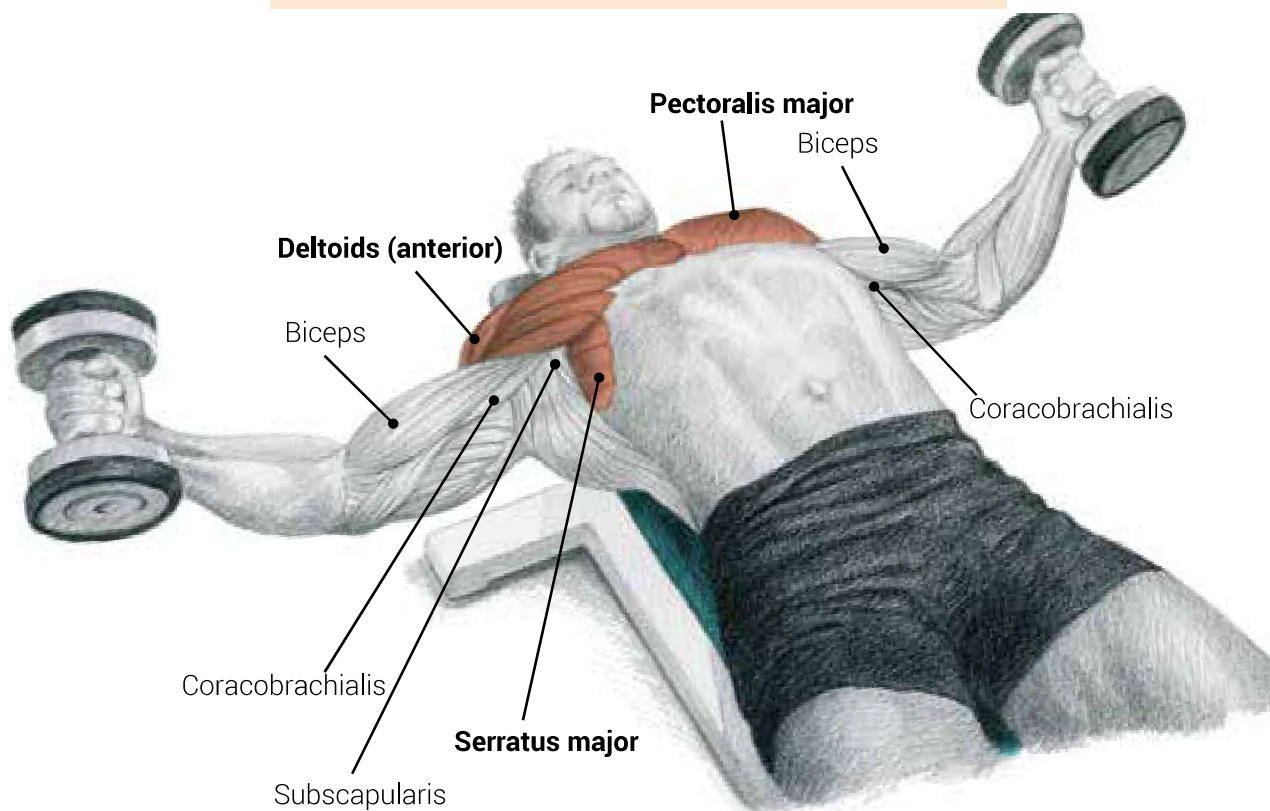
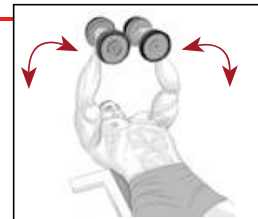


Muscles involved

Main muscles. Pectoralis major, deltoids (anterior), serratus anterior

Secondary muscles. Coracobrachialis, subscapularis, biceps brachii

Antagonists. Latissimus dorsi, deltoid (posterior), triceps, trapezius, rhomboids, teres



Technique

Lie flat on a narrow bench supporting your head and back with your feet on the ground (if the bench is low) or on the end of the bench. Hold the dumbbells above your chest, keeping them slightly apart, with your palms facing each other and your elbows semi-flexed. Breathe in deeply while you lower the weights to the level of the chest (depending on your flexibility) without changing the position of your elbows. Raise the dumbbells vertically and inwards but without letting them touch. Breathe out at the end of the movement. Keep your elbows away from your body as if you were hugging someone.

Comments

In the first place, let us note that flys are practically the same as the dumbbell press (see Ex. 4 above), at least as far as the pectoralis major is concerned. This is because the pectoral muscle is inserted in the humerus, which moves in the same manner in both the press and flys. The difference in the feeling experienced when you do this exercise is due to the more distant point at which power is applied in bodily leverage (in technical terms the power moment is stronger). Surprisingly, some trainers continue to believe that this is a differentiated chest exercise, since the main difference is not in the pecs but in the absence of any involvement of the triceps.

According to bodybuilding lore, meanwhile, dumbbell flies help expand the chest, especially in young practitioners who are still growing. The gains are less for older people, although there is evidence that the exercise may elongate the intercostal cartilage (see Ex. 5).



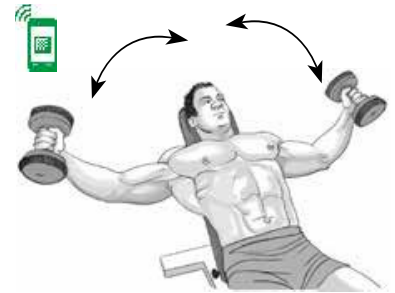
Common mistakes: flexing the elbows, which makes the exercise into a press (this is not harmful, but you are no longer doing flys); excessive weight load, which risks damaging the joints; shifting the strain onto the deltoid muscles; incorrect breathing; lowering the arms too far

Variants

5.2 ... incline

Muscles involved: pectoralis major (clavicular area), deltoids (anterior), serratus anterior

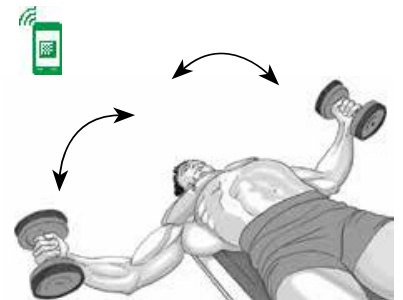
Technique. Essentially, the technique used is the same as in the basic exercise but on a bench set at an incline of 30 to 45° (see Ex. 2.2 «incline press with dumbbells»). Obviously, it is the upper fibers that make the greatest effort, although the rest contribute.



5.3 ... decline

Muscles involved: pectoralis major (lower part), deltoids (anterior), serratus anterior

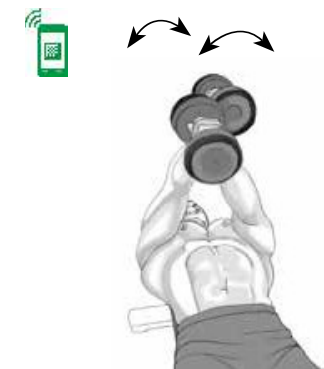
Technique. The same as in the basic exercise, but on a bench set at a decline of between 20 and 40° (important: see Ex. 3 and 3.2 «decline press»). In contrast to incline flys, it is the lower fibers that do most of the work in this exercise. The head down position makes this exercise dangerous in terms of both execution and biology, and it is not recommended in general.

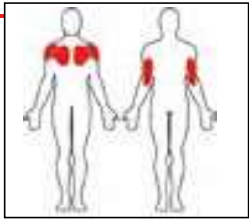


5.4 ... crossover

Muscles involved: pectoralis major, deltoids (anterior), serratus anterior

Technique. The technique is the same as in the basic exercise, but the hands cross over at the end of the movement, which in theory causes a stronger final contraction of the pectoral muscle. The aim is to achieve a complete contraction and, in theory, to increase the participation of the pectoral muscle's sternal portion. In practice, however, the last few centimeters of the movement are not made against gravity, so you really need cables to achieve the extra contraction (Ex. 17).



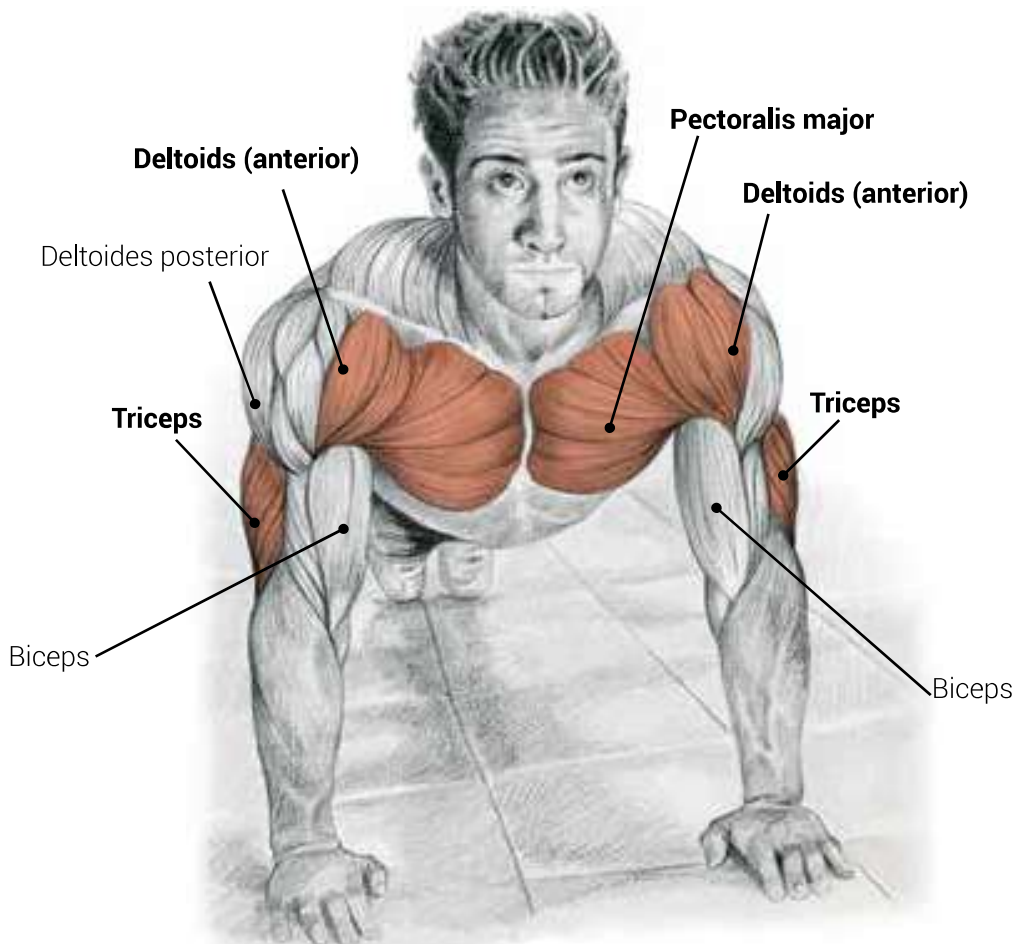
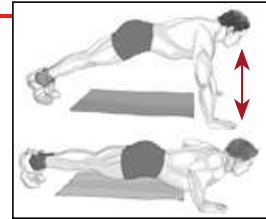


Muscles involved

Main muscles. Pectoralis major, triceps, deltoids (anterior)

Secondary muscles. Serratus anterior, coracobrachialis, subscapularis

Antagonists. Latissimus dorsi, biceps, deltoids (posterior)



Technique

Lie on your front on the floor (prone) with your feet together and your hands just over shoulder-width apart, fingers facing slightly inward. Start with your arms extended and your legs straight. Lower your body until your chest is just touching the floor. Keep your hips immobile. Your body should be rigid like a board as you come down. Breathe in for the first half of the downward movement and breathe out towards the end of the upward movement.

Comments

This exercise is similar to the bench press, but it uses the body's own weight. If you feel pain in your wrists, you can use your fists as support without changing the workout received by the muscles. A progressive regime from light to demanding would be as follows: (1) against a wall with feet close; (2) against a wall with feet further back; (3) on the floor with the support of your knees and your hands on a raised support; (4) on the floor with knee-support and your hands on the floor; (5) feet (but not knees) on the floor and hands on a raised support; (6) hands and feet on the floor as explained for the basic exercise. If you find the exercise too easy, just slow the movement down; if you find it very hard, you can make it easier by opening your legs wider.

The biggest advantage of this exercise is that it requires no equipment whatsoever, so you can keep going until muscle failure without any danger of coming to harm.



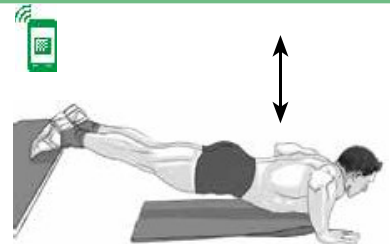
Common mistakes: failure to lower the shoulders and waist all at the same time; short movement and/or doing the exercise too fast.

Variants

6.2 ... feet raised

Muscles involved: pectoralis major (clavicular area), triceps, deltoids (anterior)

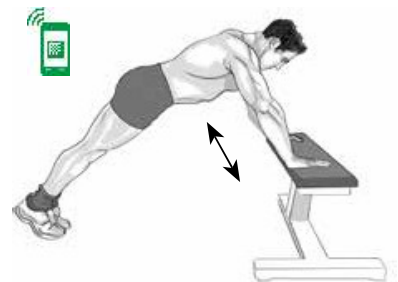
Technique. The movement is the same, but the feet are supported on a bench or step. The upper (clavicular) and mid-parts of the pectoral muscle work harder in this variant.



6.3 ... hands raised

Muscles involved: pectoralis major, triceps, deltoids (anterior)

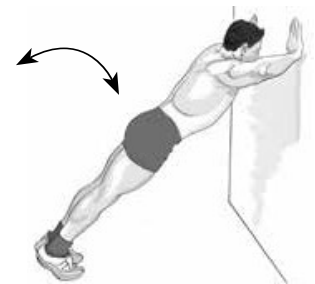
Technique. The same as in variant 6.2 but with your feet on the ground and your hands on a bench or step. The lower and mid-parts of the pectoral muscle work harder in this variant, and the exercise is less demanding.



6.4 ... against a wall

Muscles involved: pectoralis major, triceps, deltoids (anterior)

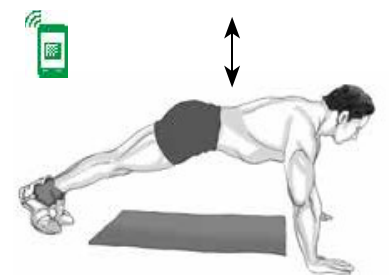
Technique. The movement is the same but the exercise is done against a wall or a horizontal bar. This is an easy exercise for beginners or it can be used as a warm-up. Clearly, you will need to perform the movement slowly enough to maintain constant tension. This exercise becomes more difficult the further your feet are from the wall.

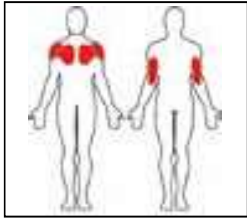


6.5 ... elbows straight

Muscles involved: serratus, subscapularis, deltoid (anterior), pectoral muscles

Technique. The position is the same as in the basic exercise, but the elbows are not flexed at any time. Make the movement with your shoulders by pressing against the floor to curve your spine. Travel is only an inch or so, but it is enough to work out the serratus and subscapularis muscles. It is more comfortable to do this exercise on a barbell press bench (Ex. 12).



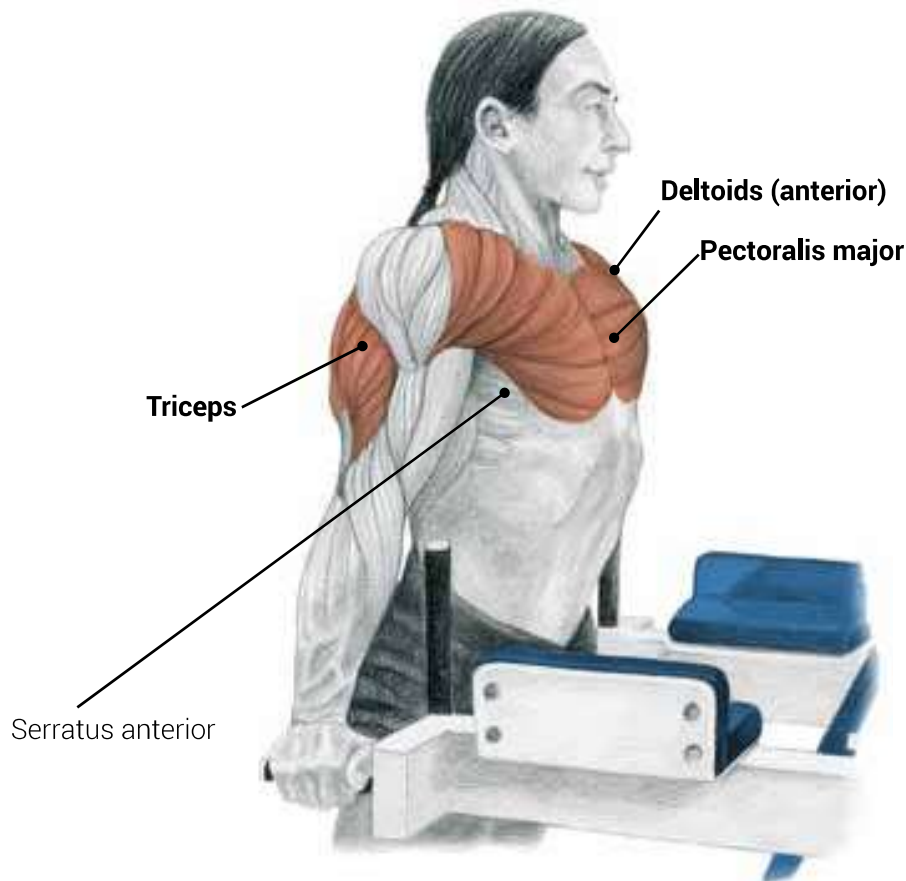
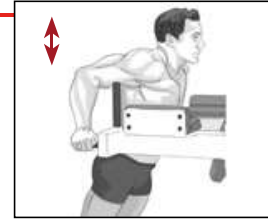


Muscles involved

Main muscles. Pectoralis major (lower part), triceps, deltoids (anterior), pectoralis minor

Secondary muscles. Serratus anterior, coracobrachialis, subscapularis

Antagonists. Latissimus dorsi, biceps, deltoids (posterior), trapezius



Technique

Grasp the parallel bars with a moderately broad neutral grip (or even better a downward V-grip). Bend your torso forward a little and keep your legs together. Breathe in as you lower your body vertically, bending forward from the hips and bringing your legs forward. Your elbows should move backwards away from the torso as you come down. Push back up again when you reach the lowest point of the movement and breathe out.

Comments

This exercise is an excellent alternative to the decline press, although it requires some strength and is therefore not recommended for beginners. The demands placed on the triceps and deltoids are considerable, but you should concentrate effort on the pectoral muscle above all, trying to feel the elongation as you lower your body and the contraction as you push back up against the bars. Be careful, or avoid the exercise, if you have suffered any elbow or shoulder injury. This exercise should always be done slowly unless you are doing training specifically for some kind of sport.

Bar dips are difficult to perform properly, which leads some people to make only a short tug close to full extension of the arms, which is easier.



Common mistakes: scant travel; excessive demands on the triceps, too much weight (where used); poor positioning of the torso during the movement; performing the exercise too fast.

Variants

7.2 ... with weights

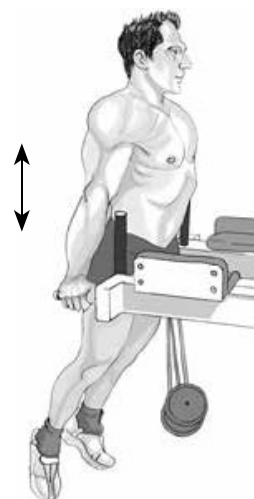
Muscles involved: pectoralis major (lower part), triceps, deltoids (anterior), pectoralis minor



Technique. The movement and technique are the same as for the basic exercise. The only difference is to hang a weight from your waist or a belt (or hold a dumbbell between crossed feet) to increase the intensity of the exercise. If a weight is used, the precautions mentioned for the basic exercise are even more important, because you are increasing the risk of harm to the muscles worked.

In this light, it is preferable to slow down and increase the number of reps you do rather than adding any additional weight.

Machines exist (for both dips and pull-ups) incorporating a weighted plate and a vertical cable that can be hooked up to a belt, although they are not widespread. All of the above comments concerning free weights also apply.

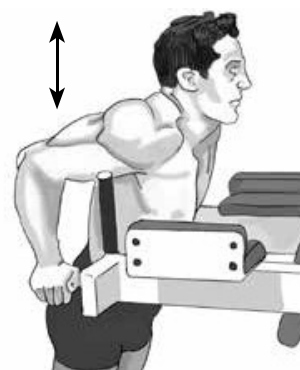


7.3 ... body straight

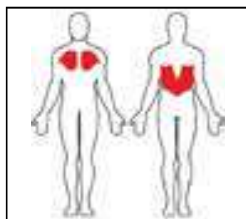
Muscles involved: triceps, pectoralis major (lower part), deltoids (anterior), pectoralis minor, latissimus dorsi



Technique. The downward movement is much more vertical in this variant, and the torso is not bent forward. This shifts more work to the triceps, although the lower part of the pectoral muscle is still intensively worked.

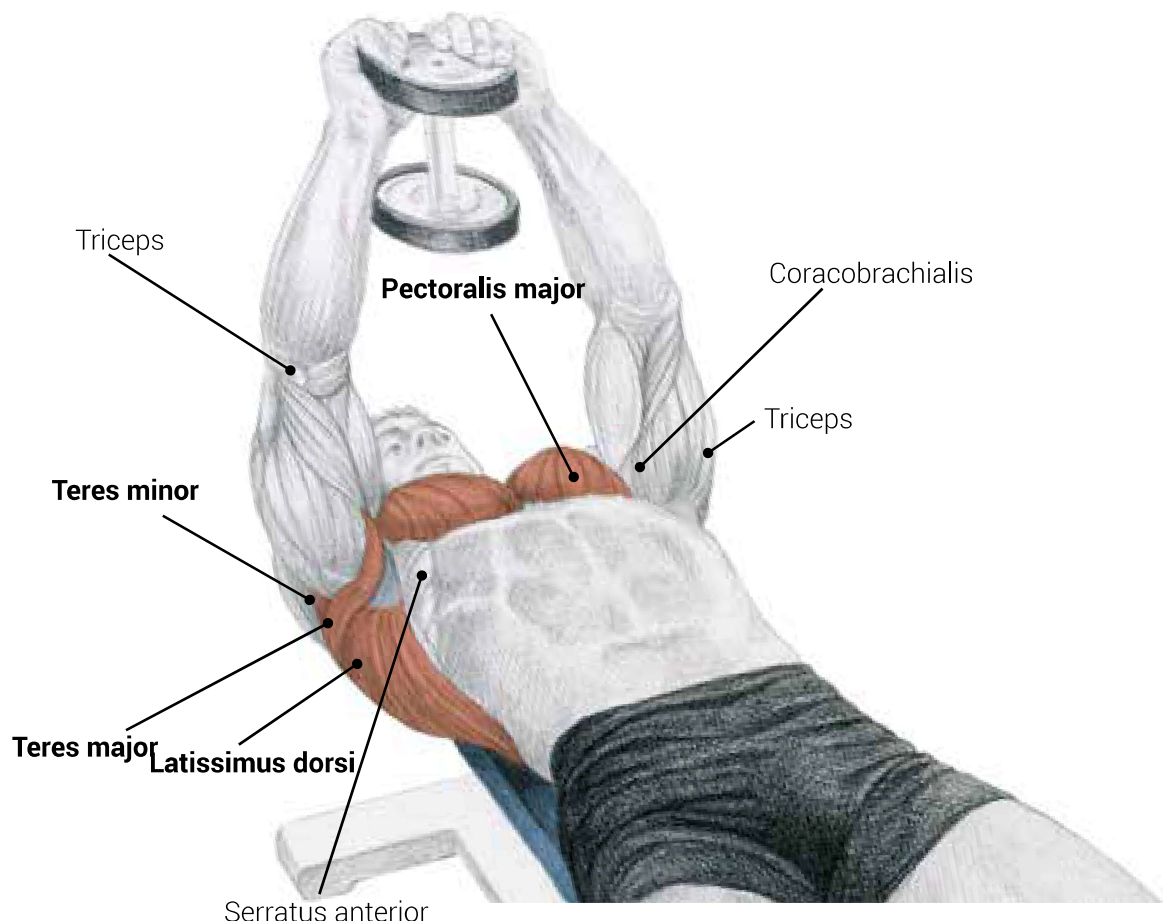


Injury: distension of the pectoral muscle. Movements involving a lot of strain and/or movement can distend or tear the pectoral muscle, especially at the insertion into the humerus. This kind of injury is usually caused by trying to lift too great a weight or when the muscle is stretched too far under strain. Rest and the application of ice is usually enough to cure the problem if the distension is not serious, but it may be necessary to seek medical attention. In less serious cases, at least one week's absolute rest will be needed. Otherwise, you may have to avoid exercising the muscle for up to two months, or even longer.



Muscles involved

Main muscles. Latissimus dorsi, teres, pectoralis major
Secondary muscles. Serratus anterior, coracobrachialis, triceps, rhomboids
Antagonists. pectoralis major, deltoids (anterior), triceps



Technique

Lie back on a bench with your head just over the edge. Hold the dumbbell vertically with the bar running through the triangle formed by the thumbs and index fingers. Keeping your elbows semi-flexed throughout, slowly lower the weight above and behind your head at the same time as you inhale deeply. You should feel a stretch in your pectoral muscles and expansion of the chest. Bring the dumbbell back up to the vertical above your eyes as your pectoral muscle contracts. Exhale on completing the lift.

Comments

This is an exercise for experienced practitioners, which not only works the pectorals but also the dorsal and adjacent muscles. In theory, it «expands» the chest (see Ex. 5 «Dorsal Group»), and it has traditionally been used for this purpose and to improve flexibility. It is therefore important to breathe in deeply. The muscles involved are very strong and leverage is favorable, so it is possible to move considerable weights. This is normally unnecessary, however, and can lead to poor execution and injury. The dumbbell pull-over should not be used to achieve hypertrophy of the pectoral muscle. Other more specific exercises exist for this purpose. Finally, we may note that the use of a barbell or dumbbells does not differentiate between a chest and a back exercise, as is sometimes claimed.

pull-over



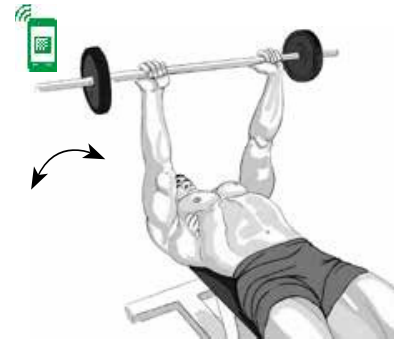
Common mistakes: too much weight; incorrect breathing; too short or too long a movement; flexing the elbow (triceps).

Variants

8.2 ... with barbell

Muscles involved: pectoralis major, latissimus dorsi, teres major.

Technique. Take a short barbell, preferably of the EZ-type (not straight but curved in an ergonomic «W» shape) with an over-hand grip and perform the same movement as with the dumbbell. The variant is not as safe as the basic exercise as there is a risk of losing balance.



8.3 ... crossed bench

Muscles involved: pectoralis major, latissimus dorsi, teres major.

Technique. The only difference in this exercise is that your butt and your head will be left free and your torso will rest on your shoulders on a bench set crosswise to the body. You need to find your balance before beginning the exercise with the dumbbell. You can lower your hips slightly as you lower the weight to allow a longer stretch. Begin with the dumbbell on the bench to one side of your head (or seek assistance from a spotter). This variant, popularized by Arnold Schwarzenegger, is more suitable for advanced practitioners.



8.4 ... two hands alternating

Muscles involved: pectoralis major, latissimus dorsi, teres major.

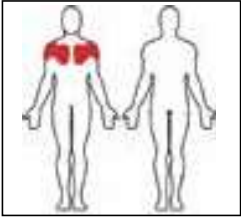
Technique. The technique is the same as in the basic exercise (with the bench in line or crosswise), but two dumbbells are used alternately. This allows independent localization of the muscles worked, although the variant is more difficult technically. In general terms, it is no better than the conventional exercise.



Mental focus on the muscle worked is key to performing exercise movements properly, not only to avoid accidents but also to stimulate the area you wish to train. If concentration is lacking, other muscles may take over to some extent from the one you are supposedly working out.



Dumbbell twists



Muscles involved

Main muscles. Pectoralis major, deltoids

Secondary muscles. Serratus anterior, coracobrachialis, biceps

Antagonists. Pectoral, dorsal, triceps

Technique

Lie flat on a bench holding the dumbbells vertically above your head (palms facing each other). Keeping your elbows semi-flexed, slowly lower the weight above and behind your head at the same time as you inhale (like in Ex. 8, pull-over). Keep your elbows still. When you have brought the dumbbells down to the level of your head, bring your arms round to your sides moving them parallel to the floor (adduction) to slightly below shoulder level, and from there flex your shoulder muscles to raise them to the starting position. The whole movement should be performed slowly and with control. Breathing is the same as in the pullover exercise. Breathe out as you bring your arms round to your sides (adduction), then breathe in before raising the weights and breathe out again as you complete the whole movement.



Comments

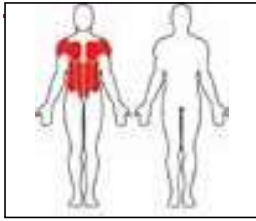
Visually, this exercise is like swimming on your back (using the three dimensions in which the shoulder is free to move), although the muscle groups involved do not work in the same way. This is rather a mobility than a volume exercise, and you should use a light weight. Also, it works the deltoids and other adjacent muscles as well as the pecs. As a variant, you can do the twists in reverse, working the same muscles eccentrically (negative movement) and in the opposite direction.



Common mistakes: too much weight; exaggerated circular movement of the shoulder



Rolling dumbbell push-ups



Muscles involved

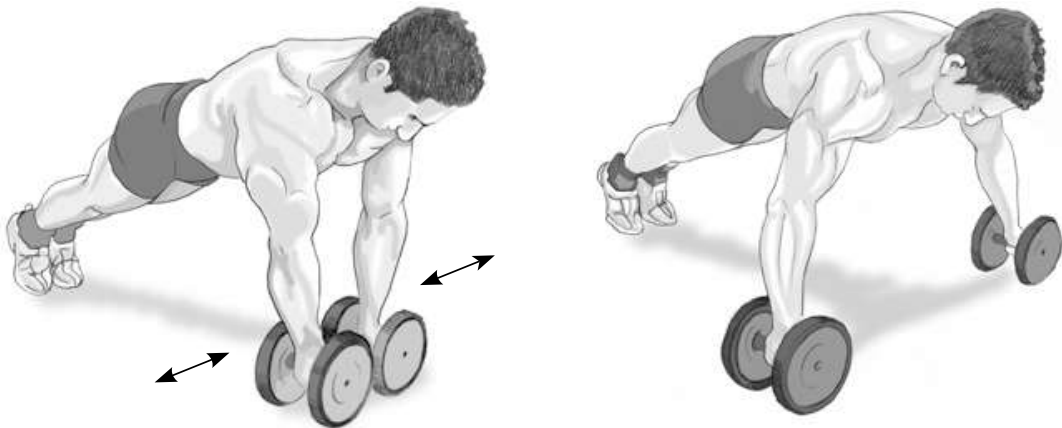
Main muscles. Pectorals, deltoids (anterior), abdominals

Secondary muscles. Serratus anterior, coracobrachialis, subscapularis, biceps

Antagonists. Dorsal, teres, trapezius, deltoids (posterior)

Technique

The position is the same as for «floor push-ups» but supported on two dumbbells with the elbows semi-flexed. Let your arms open as you roll the dumbbells outward. This movement is similar to the one you make doing flys. Hold the movement and clench your pectoral muscles to bring the dumbbells back together at the starting position. Breathe in as you go down and out as you come up.



Comments

This rather unusual exercise takes both strength and coordination. It is not recommended for beginners, and it can anyway easily be substituted by less difficult exercises. Some dumbbells cannot be rolled as explained, although special «skates» exist for this purpose. A variant is to roll the dumbbells forward, intensively working the abdominal and back muscles. A single moving disc with a bar running through it and held on each side is preferable (see Ex. 13). Rolling dumbbell push-ups are not really any better than the classic exercises for the pectoral group, although the technique can be used for training outside the gym when sufficient weight is not available to achieve high intensity.



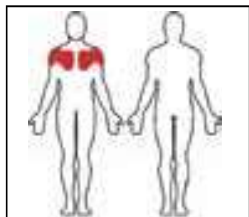
Common mistakes: poor technique, failure to warm up properly.



Proteins are the building blocks of the muscles, and eggs, fish and meat are excellent natural sources. Soya is a good vegetable source of protein.



One-handed lateral barbell lift



Muscles involved

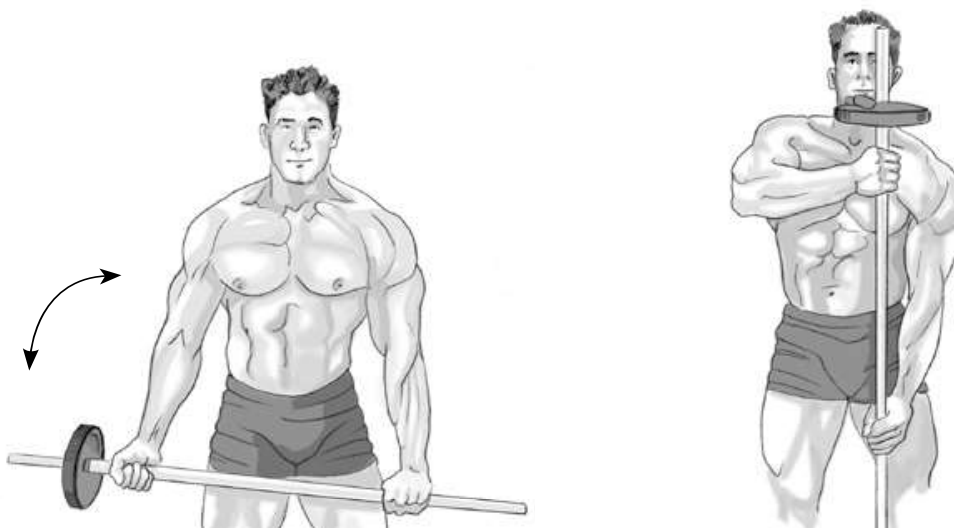
Main muscles. Pectoralis major (clavicular area), deltoid (anterior)

Secondary muscles. Serratus anterior, coracobrachialis, biceps

Antagonists. Dorsal, teres, trapezius, deltoids (posterior)

Technique

Stand holding a bar with a weight at only one end. The hand at the neutral end stays still, gripping the bar overhand, while the other holds the bar underhand close to the weight. Lift the bar to vertical making a semi-circular movement pivoting against the lower hand. After completing the movement lower the bar gently to the starting position. Breathe in as you lower the bar and out as you raise it.



Comments

This unconventional exercises basically works the upper area of the pectoral muscle and the deltoids (anterior part). It can be useful as the last exercise in a training session to break the routine, or to train for specific (throwing) sports. As a variant, you can do the exercise seated or kneeling with the bar on the ground. Basically, the one-handed lateral barbell lift is confined to preparatory training for sports where athletes have to make similar movements



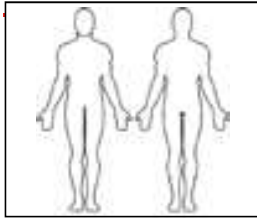
Common mistakes: too much weight; poor technique.



There are no sports where strength training has an adverse effect, and it is highly beneficial for most.



Bench press with elbows straight



Muscles involved

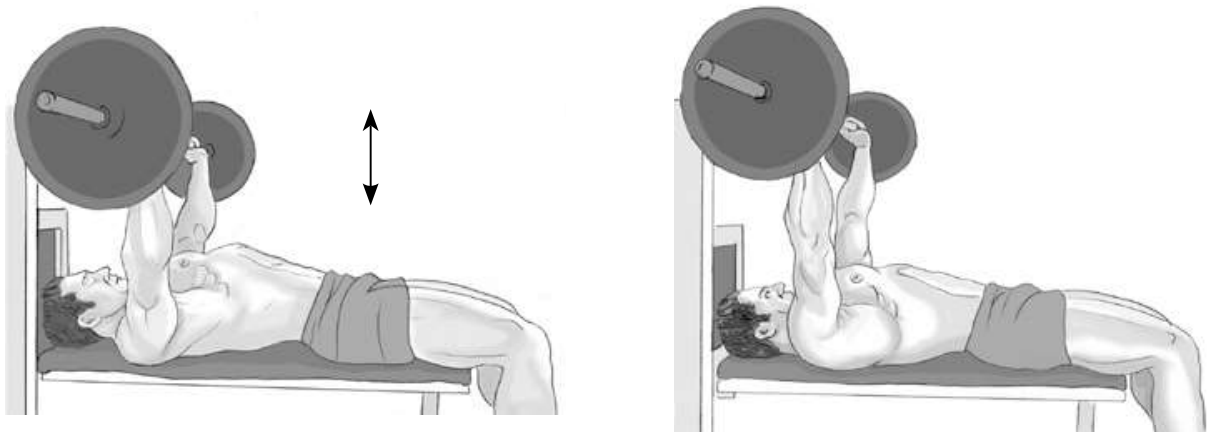
Main muscles. Serratus, subscapularis

Secondary muscles. Deltoids (anterior) and pectorals

Antagonists. Dorsal, teres, trapezius, infraspinatus, deltoids (posterior)

Technique

The starting position is the same as the bench press (Ex. 1) either with barbell or dumbbells, but in this exercise you should use a lot less weight and avoid flexing your elbows at any point. The movement consists of lifting the shoulders a few centimeters from the bench to work out the serratus and subscapularis. Breathe in as you lower the bar and out as you raise it.



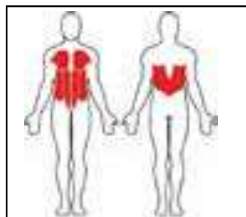
Comments

This variant provides a supplementary exercise for a complete pecs work-out, and it can also be used in the rehabilitation of winged scapula and similar problems due to weakness or atrophy of the subscapularis or other muscles. Despite the name of the exercise, you should not extend the arm so far as to lock the elbows, which should remain very slightly flexed to ensure that the surrounding muscles and not the ligaments take the strain. Full extension should be confined to very light loads (e.g. the bar alone, see Ex. 6.5).



Common mistakes: bending the elbows to perform a press, incorrect travel, rebounds.

Floor dumbbell pull-over



Muscles involved

Main muscles. Pectoralis major, latissimus dorsi, abdominals

Secondary muscles. Teres, serratus anterior, coracobrachialis, triceps, rhomboids

Antagonists. Deltoids, upper portion of pectoralis major

Technique

Start from the same position as in «dumbbell push-ups» (Ex. 10) but with your hands placed further forward. Roll the dumbbells forward to lower your torso towards the ground and back to raise it and return to the starting position. Breathe in as you go down, then hold your breath and exhale on completing the upward movement.



Comments

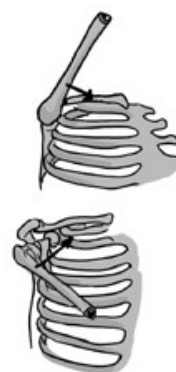
This is an advanced exercise, and it also requires a strong isometric contraction of the abdominal muscles. Overweight or very heavy people will find it very difficult, although you can try kneeling rather than supporting your legs on your toes. Floor dumbbell pull-overs do not offer any major advantages over conventional exercises. Ideally, you should use a single disc with a bar through the middle or a purpose designed roller. Though this exercise has been included with the rest of the pectoral group, it also works out the back muscles.



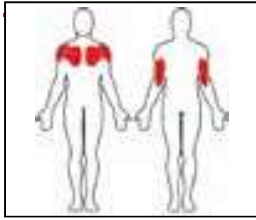
Common mistakes: poor technique; flexing the torso to raise the body instead of pulling with arms extended.



The pectoralis major is the muscle responsible for moving the arm to an angle of about 60°. After this point it makes the opposite movement, bringing the arm back. This is why it is involved in exercises like «front dumbbell shoulder press» (see Ex. 3 «Shoulders») and «Palms up / biceps pull-ups» (see Ex. 1.3 «Back»).



Floor press



Muscles involved

Main muscles. Pectoralis major, triceps

Secondary muscles. Deltoids (anterior), coracobrachialis, serratus anterior, subscapularis

Antagonists. Latissimus dorsi, biceps, deltoids (posterior)

Technique

Lie on the floor with your knees flexed and the soles of your feet firmly planted. Grasp the bar overhand (with your palms facing towards your feet) with your hands a little more than shoulder-width apart and hold it vertically above your chest. Preferably you should place your thumb below the grip. Breathe in as you lower the bar until the point where your elbows are just touching the floor. Hold your breath and raise it again vertically. Your elbows should stay perpendicular (and away from) your body, and you should avoid locking them when you reach the top of the movement. Breathe out on completing the lift.

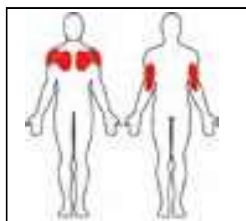


Comments

This exercise is almost identical to the bench press (Ex. 1) or dumbbell press (Ex.4), but lying on the floor means the movement is necessarily shorter. This is not usually recommended for all-round development of the chest muscles. However, the floor press makes an acceptable variant for practitioners who feel pain in their shoulders doing the conventional bench press, or when no help is available and safety is a concern. You could also do the floor press using dumbbells, but this involves a greater risk when you pick up, position and put down the weights, so it is not usually encouraged.

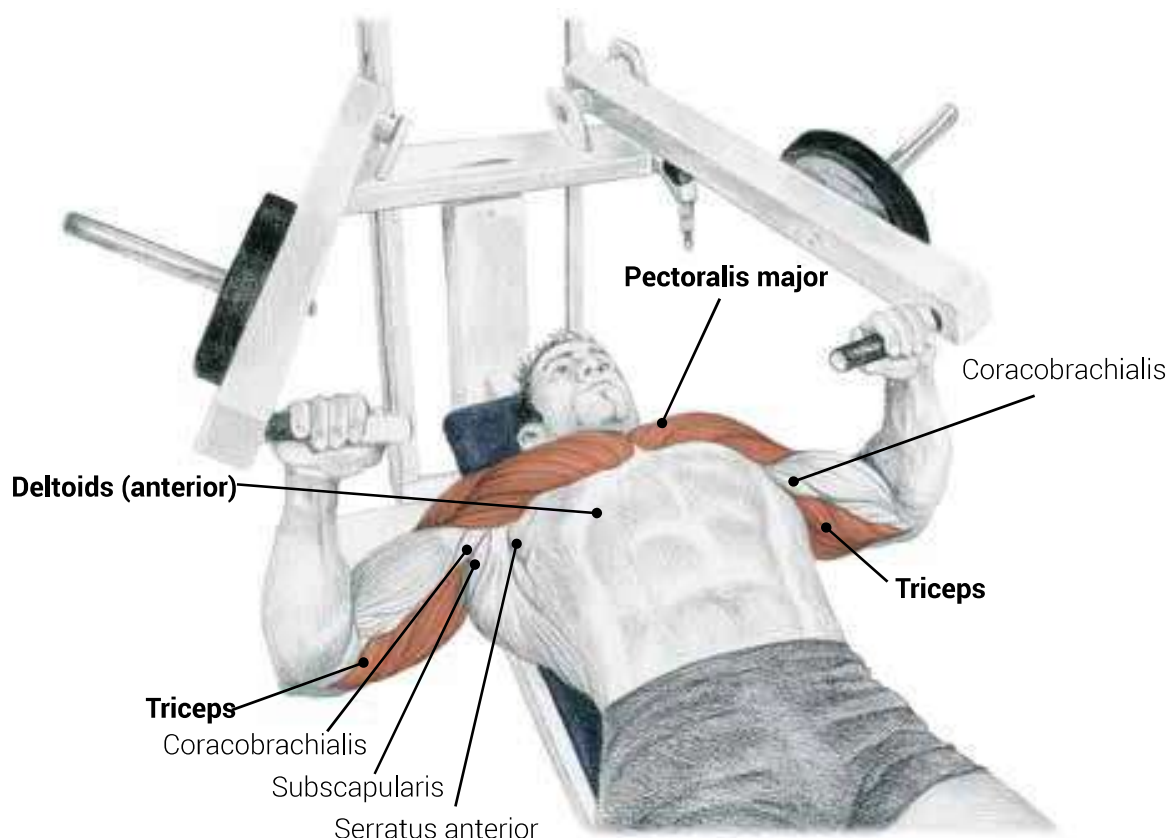
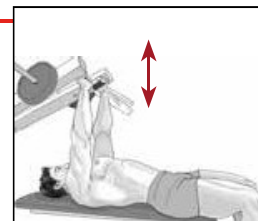


Common mistakes: resting your elbows on the floor; too much weight; locking your elbows at the top of the lift; unequal exertion by both arms.



Muscles involved

Main muscles. Pectoralis major, triceps, deltoids (anterior)
Secondary muscles. Coracobrachialis, serratus anterior, subscapularis
Antagonists. Latissimus dorsi, biceps, deltoids (posterior)



Technique

Lie flat on the bench with your feet on the ground (if the bench is low) or on a step. Grasp the bars, which should be vertically above the chest, overhand (pronation) and with your hands slightly more than shoulder-width apart. Preferably you should place your thumb below the grip. Breathe in as you lower the weight to the level of the middle of your chest and then raise it vertically. Your elbows should stay perpendicular (and away from) your body. Avoid locking your elbows when you reach the top of the movement. Breathe out on completing the lift.

Comments

This exercise is basically the same as the barbell bench press (Ex. 1) and the dumbbell bench press with all that they imply. It is suitable for both beginners and experienced practitioners. Tighten the pectoral muscle as you raise the weight, as if you were going to hug someone as well as lifting. This ensures that the deltoids and triceps do not take over most of the work. A well-designed machine will allow you to take the weight from the extension of the arms at the top of the movement on the first repetition.

A machine exists to do a vertical (downward) press from a seated position. This movement is very similar to that described in «parallel dips» (Ex. 7).

The bench press machine can also be used to do the elbows straight variant, as in «bench press with elbows straight» (Ex. 12) or «Smith machine bench press with elbows straight» (Ex. 16.4).