

Complete evidence-based exercise database by muscle group

This comprehensive database contains **100+ exercises** organized by muscle group, each with difficulty ratings, equipment requirements, and targeted muscle heads based on EMG research and Jeff Nippard's recommendations. The exercises span all skill levels and equipment options, making this ideal for building customizable workout programs.

Chest exercises

The pectoralis major has distinct upper (clavicular) and lower (sternal/costal) fiber regions that respond differently to pressing angles. EMG research from Rodríguez-Ridao et al. (2020) confirms that **30° incline produces maximum upper chest activation**, while flat and decline variations emphasize the mid and lower portions. [PubMed Central](#) [nih](#)

Upper chest (clavicular head)

Exercise	Difficulty	Equipment	Target	Research Notes
Incline Barbell Bench Press	Medium	Barbell, Bench, Squat Rack	Upper pec, anterior deltoid, triceps	Nippard A-tier ; EMG peaks at 30° incline (~30% MVIC)
Incline Dumbbell Press	Medium	Dumbbells, Bench	Upper pec, anterior deltoid, triceps	Nippard A-tier ; deeper stretch than barbell at 15-30°
Low-to-High Cable Fly	Easy	Cables	Upper pec, anterior deltoid	Follows clavicular fiber direction; constant tension Gymshark Central
Incline Dumbbell Fly	Easy	Dumbbells, Bench	Upper pec	Isolation emphasizing stretched position Swolverine
Seated Cable Fly (Low Position)	Easy	Cables, Bench	Upper pec	Nippard S-tier ; eliminates balance, maximizes pec tension Fitness Volt
Incline Smith Machine Press	Medium	Machines, Bench	Upper pec, anterior deltoid, triceps	Nippard A-tier ; safe failure training barbend
Reverse-Grip Bench Press	Hard	Barbell, Bench, Squat Rack	Upper pec, triceps	Supinated grip activates clavicular head on flat bench Untapped Supplement
Landmine Press	Medium	Barbell	Upper pec, anterior deltoid	Arc pattern aligns with upper chest fibers BOXROX

Mid chest (sternal head)

Exercise	Difficulty	Equipment	Target	Research Notes
Machine Chest Press	Easy	Machines	Mid pec, anterior deltoid, triceps	Nippard S-tier #1 ; deep stretch, smooth resistance, easy progression (Fitness Volt) (barbend)
Flat Barbell Bench Press	Medium	Barbell, Bench, Squat Rack	All pec regions, triceps	ACE study: most effective overall chest exercise (nih)
Flat Dumbbell Press	Medium	Dumbbells, Bench	Mid pec, triceps	Nippard A-tier ; superior ROM vs barbell (barbend)
Seated Cable Fly (Mid Position)	Easy	Cables, Bench	Mid pec	Nippard S-tier isolation; constant tension throughout (Fitness Volt) (barbend)
Pec Deck Machine	Easy	Machines	Mid pec	ACE study: 98% activation vs bench press (ACE)
Cable Crossover (Mid Height)	Easy	Cables	Mid pec	ACE study: 93% activation; excellent stretch (ACE)
Flat Dumbbell Fly	Easy	Dumbbells, Bench	Mid pec	Nippard A-tier ; emphasizes stretch (barbend)
Push-Ups (Standard)	Easy	Bodyweight	Mid pec, triceps, anterior deltoid	Comparable activation to bench at similar intensity
Deficit Push-Ups	Medium	Bodyweight, Bench	Mid pec, triceps	Hands elevated for deeper pec stretch

Lower chest (costal fibers)

Exercise	Difficulty	Equipment	Target	Research Notes
Chest Dips	Medium	Bodyweight	Lower pec, triceps	Nippard A-tier ; 30-45° forward lean maximizes lower pec (BOXROX)
Weighted Dips	Hard	Bodyweight	Lower pec, triceps	Deep stretch induces high mechanical tension (BOXROX)
Decline Barbell Bench Press	Medium	Barbell, Bench, Squat Rack	Lower pec, triceps	Higher lower sternal activation vs flat (Schoenfeld 2016) (BOXROX)
Decline Dumbbell Press	Medium	Dumbbells, Bench	Lower pec, triceps	Greater ROM than barbell; 15-30° decline optimal (BOXROX)
High-to-Low Cable Fly	Easy	Cables	Lower pec (costal)	Follows lower fiber direction; constant tension (ATHLEAN-X)
Decline Push-Ups	Easy	Bodyweight, Bench	Lower pec, triceps	Feet elevated changes angle to bias lower chest (BetterMe)
Decline Dumbbell Fly	Easy	Dumbbells, Bench	Lower pec	Isolation at decline for lower sternal fibers (Swolverine)
Dip Machine (Assisted)	Easy	Machines	Lower pec, triceps	Adjustable assistance for beginners (Gymshark Central)

Arm exercises

The biceps has two heads responding to arm position: [Men's Health](#) **arms behind body stretch the long head** [Built with Science](#) (outer peak), while **arms in front emphasize the short head** [Boostcamp App](#) (inner width). [Community Strength Austin](#) The triceps long head is the largest (~50% of mass) and uniquely crosses the shoulder, requiring overhead movements for full development. [BarBend](#) [StrengthLog](#)

Biceps: short head exercises

Exercise	Difficulty	Equipment	Target	Research Notes
Preacher Curl (45°)	Medium	Barbell/ Dumbbells, Bench	Short head emphasis	Nippard S-tier ; 2023 study shows better distal bicep growth ResearchGate BarBend
Concentration Curl	Easy	Dumbbells, Bench	Short head, overall biceps	ACE #1 for biceps activation; minimizes cheating ACE Fitness
Wide-Grip Barbell Curl	Easy	Barbell	Short head emphasis	Wide grip reduces long head involvement Hevy
Wide-Grip Cable Curl	Easy	Cables	Short head emphasis	Constant tension throughout ROM
Spider Curl	Medium	Dumbbells/ Barbell, Bench	Short head emphasis	Chest-supported; prevents momentum SOLE FITNESS
EZ Bar Curl (Wide Grip)	Easy	Barbell (EZ)	Short head emphasis	Marcolin 2018: higher activation than DB curls NCBI
Machine Preacher Curl	Easy	Machines	Short head emphasis	Easy on joints; perfect isolation for beginners Community Strength Austin
No Money Curl	Medium	Dumbbells	Short head emphasis	External rotation targets inner bicep ATHLEAN-X

Biceps: long head exercises

Exercise	Difficulty	Equipment	Target	Research Notes
Bayesian Cable Curl (Face Away)	Medium	Cables	Long head maximum stretch	Nippard S-tier #1 ; arms behind body, maximum stretch
Incline Dumbbell Curl	Medium	Dumbbells, Bench	Long head emphasis	Nippard A-tier ; shoulder hyperextension stretches long head (Community Strength Austin)
Drag Curl	Medium	Barbell, Dumbbells	Long head emphasis	Elbows pull back behind body during curl
Hammer Curl	Easy	Dumbbells	Long head, brachialis	Best for biceps "peak"; neutral grip (MyoMax Performance)
Chin-Up	Hard	Pull-up Bar	Long head (secondary), lats	Nippard B-tier ; compound back/biceps
Lying Flat Bench Curl	Medium	Dumbbells, Bench	Long head improved stretch	Better bottom tension than incline per Nippard
Narrow-Grip EZ Bar Curl	Easy	Barbell (EZ)	Long head emphasis	Keep elbows from moving forward
Overhead Cable Curl	Medium	Cables	Long head, peak development	More effective long head bias than conventional curls

Triceps: lateral and medial head exercises

Exercise	Difficulty	Equipment	Target	Research Notes
Cable Pushdown (Rope)	Easy	Cables	Lateral and medial head	Nippard A-tier ; spread rope at bottom for peak contraction (Fitness Volt)
Cable Pushdown (Straight Bar)	Easy	Cables	Lateral and medial head	Close to S-tier; locked-in feel, easy progression (Fitness Volt)
Reverse-Grip Pushdown	Medium	Cables	Medial head emphasis	Underhand grip specifically targets medial head
Close-Grip Bench Press	Medium	Barbell, Bench	All heads, lateral at lockout	Nippard A-tier ; compound for raw strength (BarBend)
Diamond Push-Ups	Medium	Bodyweight	Lateral and medial head	Bohler 2011: #1 for triceps EMG activation
Bench Dips	Easy	Bench	Lateral head emphasis	Good for beginners; compound movement (BarBend)
Tricep Kickback (Cable)	Medium	Cables	Lateral and long head	Nippard A-tier ; constant cable tension (BarBend)
JM Press	Hard	Barbell, Bench	Lateral head, all heads	Hybrid movement; strength carryover (BarBend)

Triceps: long head exercises

Exercise	Difficulty	Equipment	Target	Research Notes
Overhead Cable Extension (Straight Bar)	Medium	Cables	Long head emphasis	Nippard S-tier #1 ; 2023 study: 40% more growth than pushdowns (BarBend)
Skull Crushers (EZ Bar)	Medium	Barbell (EZ), Bench	Long head, all heads	Nippard S-tier ; arc behind head for max stretch (BarBend)
Dumbbell Overhead Extension	Easy	Dumbbells	Long head emphasis	Overhead position maximally stretches long head (BOXROX)
Cable Overhead Extension (Rope)	Medium	Cables	Long head emphasis	Nippard A-tier ; pull apart at end for contraction (BarBend)
Incline Dumbbell Kickback	Medium	Dumbbells, Bench	Long head emphasis	Boehren study: highest long head EMG of 9 exercises
Weighted Dips (Upright)	Hard	Bodyweight	Long head, all heads	Nippard A-tier ; upright torso emphasizes triceps (BarBend)
Katana Cable Extension	Medium	Cables	Long head emphasis	Arms 30-40° forward in scapular plane (BarBend)

Shoulder exercises

Research consistently shows that **70-90% of shoulder training should focus on medial (side) delts**—they create shoulder width. (BarBend) Front delts receive substantial work from pressing movements, while rear delts are often undertrained (BarBend) despite their importance for shoulder health and aesthetics.

Front delt (anterior deltoid)

Exercise	Difficulty	Equipment	Target	Research Notes
Machine Shoulder Press	Medium	Machines	Anterior deltoid, medial delt, triceps	Nippard A+ tier #1; HackMD safe failure training, consistent tension HackMD
Seated Dumbbell Overhead Press	Medium	Dumbbells, Bench	Anterior deltoid, medial delt	Nippard A-tier; go-to without machine access
Standing Barbell Overhead Press	Hard	Barbell, Squat Rack	Anterior deltoid, core	B+ tier; HackMD highest neuromuscular activity (Saeterbakken 2013)
Dumbbell Overhead Press (Standing)	Medium	Dumbbells	Anterior deltoid, medial delt	Nippard A-tier; greater ROM than barbell
Arnold Press	Medium	Dumbbells, Bench	Anterior and medial deltoid	Higher anterior AND medial activation than standard press
Incline Bench Press	Medium	Barbell/ Dumbbells, Bench	Upper pec, anterior delt (secondary)	Greatest anterior delt among horizontal pressing nih
Front Raise (Dumbbell/Cable)	Easy	Dumbbells/ Cables	Anterior deltoid	D-tier per Nippard; redundant with pressing
Push-Up	Easy	Bodyweight	Anterior deltoid (secondary)	Trains front delts as secondary mover

Side/lateral delt (medial deltoid)

Exercise	Difficulty	Equipment	Target	Research Notes
Single-Arm Cable Lateral Raise	Easy	Cables	Lateral deltoid	Nippard S+ tier #1 ; maximum tension in stretched position HackMD LowKickMMA
Cable Y-Raise	Medium	Cables	Lateral deltoid	Nippard S-tier ; both arms, time-efficient HackMD Generation Iron
Behind-Back Cuffed Cable Lateral Raise	Medium	Cables	Lateral deltoid	Nippard S-tier ; tremendous stretch across body HackMD
Cross-Body Cable Lateral Raise	Medium	Cables	Lateral deltoid	Extended ROM for medial delt development BarBend
Lean-In Dumbbell Lateral Raise	Medium	Dumbbells, Bench	Lateral deltoid	Nippard A-tier ; tension when stretched HackMD Fitness Volt
Standing Dumbbell Lateral Raise	Easy	Dumbbells	Lateral deltoid	B-tier; zero tension at bottom but time-efficient Generation Iron
Arnold-Style Side-Lying Raise	Medium	Dumbbells, Bench	Lateral deltoid	Nippard A-tier ; good stability and ROM HackMD
Atlantis Standing Machine Lateral Raise	Easy	Machines	Lateral deltoid	Nippard A+ tier ; HackMD smooth, consistent tension HackMD
Upright Row (Cable/ Rope)	Medium	Cables/Barbell	Lateral deltoid, upper traps	B-tier; ACE ranked lowest but still effective
45-Degree Incline Row	Medium	Dumbbells, Bench	Medial and posterior deltoid	ACE study: highest medial delt activation ACE Fitness

Rear delt (posterior deltoid)

Exercise	Difficulty	Equipment	Target	Research Notes
Reverse Cable Crossover	Medium	Cables	Posterior deltoid	Nippard S-tier #1 ; full ROM, constant tension HackMD Fitness Volt
Reverse Pec Deck	Easy	Machines	Posterior deltoid	Nippard S-tier ; sit sideways for deeper stretch HackMD Generation Iron
Lying Incline Rear Delt Fly	Medium	Dumbbells, Bench	Posterior deltoid	Nippard's personal favorite; bigger stretch face-down Men's Fitness
Rope Face Pull (Underhand)	Medium	Cables	Posterior deltoid, external rotators	Nippard A-tier ; set rope lower, externally rotate HackMD Fitness Volt
Seated Rear Lateral Raise	Medium	Dumbbells, Bench	Posterior deltoid	ACE study: tied for highest rear delt activation ACE Fitness
45-Degree Incline Row	Medium	Dumbbells, Bench	Posterior and medial deltoid	Excellent multi-purpose; highest activation two categories University of Wisconsin
Bent-Over Reverse Dumbbell Fly	Medium	Dumbbells	Posterior deltoid	B-tier; neutral grip increases activation
Chest-Supported Row	Medium	Dumbbells, Bench	Rear deltoid (secondary), lats	Pull-up variations show greatest compound activation

Back exercises

The back contains multiple muscle groups requiring different movement patterns. **Vertical pulling** (pulldowns, pull-ups) emphasizes lat width, while **horizontal rowing** builds thickness. The ACE study found bent-over rows activated **3 of 5 back muscles maximally** and ranked second for the remaining two.

Upper back (traps, rhomboids)

Exercise	Difficulty	Equipment	Target	Research Notes
I-Y-T Raises (Prone)	Medium	Dumbbells, Bench	Middle and lower traps, rhomboids	ACE study: greatest lower trap activation of all exercises
Face Pulls (Omni-Direction)	Easy	Cables	Middle traps, rear delts, rhomboids	Nippard S-tier ; vary height each set
Bent-Over Row (Wide Grip)	Hard	Barbell	Middle traps, rhomboids, lats	ACE: best overall back exercise
Chest-Supported Row (Wide, High Pull)	Medium	Machines/ Dumbbells, Bench	Middle traps, rhomboids, rear delts	Nippard S+ tier #1 back exercise
Inverted Row	Medium	Pull-up Bar, Squat Rack	Middle traps, rhomboids, lats	Greater mid-trap EMG than pulldowns
Seated Cable Row (Wide Grip)	Easy	Cables	Middle traps, rhomboids, lats	Highest mid-trap activation in EMG research
Barbell Shrugs	Easy	Barbell/Dumbbells	Upper trapezius	Classic trap builder; add scapular retraction
Cable Shrugs	Easy	Cables	Upper and middle trapezius	Better fiber alignment per Nippard
Cable Y-Raise	Medium	Cables	Lower trapezius, serratus	Nippard S-tier for lower traps
Reverse Pec Deck	Easy	Machines	Rear delts, middle traps	Nippard S-tier ; smooth resistance

Mid back: lats (latissimus dorsi)

Exercise	Difficulty	Equipment	Target	Research Notes
Pull-Ups (Overhand)	Hard	Pull-up Bar	Upper lats, teres major, biceps	EMG: highest lat activation of any exercise
Chin-Ups (Underhand)	Hard	Pull-up Bar	Lats (especially lower), biceps	Virtually identical lat activation to pull-ups
Lat Pulldown (Medium Grip)	Easy	Machines	Lats, teres major, biceps	Nippard S-tier ; smooth, excellent stretch
Single-Arm Lat Pulldown (Kneeling)	Medium	Cables	Lats, teres major	Nippard S-tier ; greater ROM, corrects imbalances
Chest-Supported Row (Neutral Grip)	Medium	Machines/ Dumbbells, Bench	Lats, rhomboids, teres major	Nippard S+ tier ; eliminates cheating
Seated Cable Row (Close Grip)	Easy	Cables	Lats, lower lats, rhomboids	Nippard S-tier ; protracted scapulae = higher lat activation
Single-Arm Dumbbell Row	Medium	Dumbbells, Bench	Lats, rhomboids, rear delts	Nippard A-tier ; elbow close = more lat emphasis
Bent-Over Row (Underhand)	Hard	Barbell	Lats, lower lats, biceps	Slightly more lat activation than overhand
Straight-Arm Pulldown	Medium	Cables	Lats (isolation)	Isolates lats without bicep involvement
Dumbbell Pullover (Bottom-Half)	Medium	Dumbbells, Bench	Lats (stretched position)	Nippard A-tier ; stay in stretched position only
Kroc Row	Hard	Dumbbells	Lats, rhomboids, grip	Nippard A-tier ; controlled momentum

Lower back (erector spinae)

Exercise	Difficulty	Equipment	Target	Research Notes
Conventional Deadlift	Hard	Barbell	Erector spinae (isometric), glutes, hamstrings	C-tier for back hypertrophy; excellent for strength
Romanian Deadlift	Medium	Barbell/ Dumbbells	Erector spinae, hamstrings, glutes	Constant tension on erectors through hinge
45-Degree Back Extension	Medium	Machines	Erector spinae, glutes, hamstrings	77-82% MVC activation; full ROM
Prone Lumbar Extension	Hard	Bench, Dumbbells	Lumbar multifidus, longissimus	PubMed: 92%+ MVIC in lower back muscles
Good Mornings	Hard	Barbell	Erector spinae, hamstrings, glutes	Excellent for endurance and strength
Superman Hold	Easy	Bodyweight	Erector spinae, glutes, rhomboids	77-82% MVC; great for beginners
Bird Dog	Easy	Bodyweight	Erector spinae, multifidus, core	Evidence-based rehab exercise; anti-rotation
Glute Bridge	Easy	Bodyweight	Erector spinae (secondary), glutes	AAOS spine conditioning exercise
Jefferson Curl	Hard	Barbell	Erector spinae through flexion	Advanced; builds mobility through full range

Leg exercises

EMG and hypertrophy research reveals important findings: **seated leg curls produce 1.5x more hamstring growth** than lying curls due to the lengthened position. For glutes, a 2023 study found hip thrusts and squats produce **equal hypertrophy** despite hip thrusts showing 2x higher EMG. [\(Mennohenselmans\)](#) Deep squats (140°) significantly increase glute and adductor growth. [\(Stronger by Science\)](#)

Quadriceps

Exercise	Difficulty	Equipment	Target	Research Notes
Barbell Back Squat	Medium	Barbell, Squat Rack	All four quad heads, glutes	Nippard S-tier ; 2022 study confirms growth in all quad muscles
Barbell Front Squat	Hard	Barbell, Squat Rack	All quad heads (rectus femoris emphasis)	Nippard S-tier ; upright torso shifts tension to quads
Hack Squat	Medium	Machines	All quad heads	Nippard S-tier ; "brilliant quad builder"
Pendulum Squat	Medium	Machines	All quad heads	Nippard S-tier ; natural arc motion
Smith Machine Squat	Medium	Machines	All quad heads	Nippard S-tier ; safe failure training <div>HackMD</div>
Leg Extension	Easy	Machines	Rectus femoris, vastus lateralis/medialis	Nippard S-tier ; all four heads engaged
Bulgarian Split Squat	Hard	Dumbbells, Bench	Vastus lateralis/medialis, rectus femoris	Nippard A-tier ; deep unilateral stretch
45-Degree Leg Press	Medium	Machines	Vastus lateralis/medialis/intermedius	Nippard A-tier ; narrow stance biases quads
Goblet Squat	Easy	Dumbbells	All quad heads	Similar to front squat; excellent for beginners
Reverse Nordic Curl	Hard	Bodyweight	All quad heads (rectus femoris emphasis)	Nippard A-tier ; deepest quad stretch possible <div>Fitness Volt</div>
Sissy Squat	Hard	Cables/ Bodyweight	Rectus femoris, vastus medialis	High stretch; knees forward strengthens knees
Walking Lunges (Short Steps)	Medium	Dumbbells/ Barbell	Quadriceps	B-tier for quads; shorter steps = more quad

Hamstrings

Exercise	Difficulty	Equipment	Target	Research Notes
Seated Leg Curl	Easy	Machines	Biceps femoris, semitendinosus, semimembranosus	2021 study: 1.5x more growth than lying curl
Romanian Deadlift	Medium	Barbell/ Dumbbells	Biceps femoris, semitendinosus, semimembranosus	McAllister 2014: greatest semitendinosus activation (University of Wisconsin)
Nordic Hamstring Curl	Hard	Bodyweight	Biceps femoris, semitendinosus	Highest EMG rise rate (1091.8 nEMG/s); injury prevention (PubMed) (PubMed Central)
Glute-Ham Raise	Hard	Machines	Biceps femoris, semitendinosus, glutes	Best overall hamstring activation (McAllister) (University of Wisconsin)
Lying/Prone Leg Curl	Easy	Machines	Biceps femoris (primary), semitendinosus	Equal BF and ST activation; baseline exercise (ACE Fitness)
Stiff-Leg Deadlift	Medium	Barbell/ Dumbbells	All hamstring muscles	Upper-inside hamstring emphasis (Breaking Muscle)
Single-Leg RDL	Hard	Dumbbells	Hamstrings, glute medius	Balance challenge; corrects imbalances (Gymshark Central)
Stability Ball Hamstring Curl	Medium	Bodyweight	Semitendinosus (primary), biceps femoris	ACE: higher semitendinosus than prone curl (ACE Fitness)
Good Mornings	Medium	Barbell	Biceps femoris, semitendinosus, erectors	B-tier; good RDL alternative

Glutes

Exercise	Difficulty	Equipment	Target	Research Notes
Barbell Hip Thrust	Medium	Barbell, Bench	Gluteus maximus (all regions)	Nippard A-tier ; 2x EMG vs squat; PubMed equal hypertrophy
Walking Lunges (Long Steps)	Medium	Dumbbells/ Barbell	Gluteus maximus, medius	Nippard S-tier ; lean 30° forward for max glute
Machine Hip Abduction	Easy	Machines	Gluteus medius, minimus	Nippard S-tier for upper glutes; lean 30° forward
Step-Ups	Medium	Bench, Dumbbells	Gluteus maximus, medius, minimus	Systematic review: highest GMax activation PubMed Central Peloton
Deep Back Squat	Medium	Barbell, Squat Rack	Gluteus maximus, medius, adductors	Nippard A-tier ; 140° depth increases glute growth 65%
Cable Kickback	Medium	Cables	Gluteus maximus (upper), medius	Nippard A-tier ; kick up and out diagonally BarBend
Bulgarian Split Squat	Hard	Dumbbells, Bench	Gluteus maximus, medius	Very high GMax activation (systematic review) PubMed Central
Machine Hip Thrust	Medium	Machines	Gluteus maximus (mid-glutes)	Nippard A-tier ; minimizes setup time
Single-Leg Hip Thrust	Medium	Bench	Gluteus maximus, medius, minimus	Unilateral; addresses imbalances
Glute Bridge	Easy	Bodyweight/ Dumbbells	Gluteus maximus (mid-region)	B-tier; great for beginners The Barbell Physio
Cable Pull-Through	Medium	Cables	Gluteus maximus, hamstrings	Band tension increases at lockout The Barbell Physio
Side-Lying Hip Abduction	Easy	Bodyweight	Gluteus medius, minimus	JOSPT: best gluteus medius exercise Journal of Orthopaedic & Sport...
Lateral Band Walks	Easy	Bodyweight	Gluteus medius, minimus	Excellent warmup; functional activation Gymshark Central
Reverse Lunge	Medium	Dumbbells/ Barbell	Gluteus maximus, quads, hamstrings	Better glute emphasis than forward lunges

Equipment reference guide

For users building workouts with specific equipment constraints:

Bodyweight only: Push-ups, dips, chin-ups, pull-ups, diamond push-ups, Nordic curls, reverse Nordic curls, Superman, bird dog, glute bridges, side-lying hip abductions, inverted rows, decline push-ups

Dumbbells + Bench: Incline press variations, dumbbell rows, Bulgarian split squats, Romanian deadlifts, concentration curls, incline curls, lying tricep extensions, lateral raises, rear delt flys, hip thrusts, step-ups

Cables: All fly variations, face pulls, lat pulldowns, pushdowns, overhead extensions, lateral raises, kickbacks, pull-throughs, straight-arm pulldowns

Barbell + Rack: Squats, deadlifts, bench press, overhead press, bent-over rows, good mornings, barbell curls, skull crushers

Machines: Chest press, pec deck, leg press, hack squat, leg extension, leg curl, lat pulldown, cable row, shoulder press, hip abduction

Key programming principles from research

Stretch-focused training: Exercises that challenge muscles in length [\(BarBend\)](#) ened positions produce superior hypertrophy. [\(LowKickMMA\)](#) This explains why seated leg curls beat lying curls (1.5x growth), overhead tricep extensions beat pushdowns (40% more growth), and incline curls outperform concentration curls for long head development. [\(House of Hypertrophy\)](#)

Compound foundation, isolation refinement: Build workouts around S-tier compound movements (squats, rows, presses) then add targeted isolation work for lagging areas or specific muscle heads.

Equipment substitutions: When swapping exercises, match the movement pattern and muscle position. Replace incline barbell press with incline dumbbell press or low-to-high cable fly—all target upper chest in similar positions. Replace leg extensions with sissy squats or reverse Nordics for quad isolation.

Difficulty progression: Start beginners with machine and cable exercises (controlled movement paths, easy load adjustment), progress to free weights as technique improves, and reserve advanced bodyweight movements (Nordic curls, weighted dips, pistol squats) for experienced lifters.