

Weak in the knees?

Strengthening often-ignored joints and muscles can help keep you injury-free when you try to amp up your workout

By Wendy Donahue, Tribune Newspapers

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On the heels of that new resolution to get fit, make a joint resolution too: Pay heed not just to your calories burned and carbs earned, but also to any pain in crucial cogs of the body — such as ankles, **shoulders**, wrists.

Why? Latent weaknesses in the body can surface with any new, aggressive workout load. Strengthening the joints and muscles that will align to power that mega-bench press can keep you from being benched.

David Barton jokes that Jan. 2 is like "the day of the locusts" at the four gyms that bear his name. "People go crazy in January; they've gained weight, and a lot of them want to jump on the treadmill and run it off. But running on the treadmill really impacts on the knees and joints."

And the trend toward more challenging, intense gym and DVD workouts, such as boot camps, "Insanity" and "P90X," can open the door wider for injuries.

"They're really good workouts, but we have to find the right balance between giving people what they want and what they need," said **Chad Waterbury**, a neurophysiologist and performance trainer in **Los Angeles**. "You have to make sure that your joints can handle what it is you're going to expose your body to."

After all, maybe it's been a minute (ahem, five years) since you've gone all-out.

"A big mistake people make when returning to exercise is to try to return to the level at which they were exercising before they stopped," Appleton, Wis., physical therapist Jessica Victor said. "Basketball injuries — knee and ankle — in men age 40 to 50 are very common because of all of the cutting and jumping. Shoulders are most affected by weightlifting programs, particularly when someone has not lifted weights before and does not understand good technique."

And joints aren't the only trouble spots.

"The muscles that get particularly lazy in modern human beings are the muscles in **the back** of the body," said Burr Leonard, founder of the "Bar Method" exercise system. "We grow up not using them the way primitive man would have used them, carrying siblings on shoulders and climbing trees. Those activities intensely worked the muscles across the upper back, as well as the glutes and hamstrings, and automatically gave people core strength. We sit in chairs, we use remotes. Most strikingly, the glutes get really lazy."

That compromises form in many exercises, which can raise the risk of injury.

"It's typical for new students in our classes, when we ask them to stand in such a way that their glute is engaged, they lean back and contract the lower back instead. The glutes are difficult for people to recruit.

"Another area that's wildly in need of alignment and strengthening are the muscles across the back of the shoulders — our rhomboids, between the shoulder blades, the lower trapezius, which pull your shoulders down — and the erector spinae, which hold your **spine** upright. They aren't sufficiently developed to align and protect the shoulders in movement," she said.

So with that in mind, try these exercises to help strengthen those joints and muscles.

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3 joint exercises

"These three exercises are a very efficient way to build stability and strength in all the key joints in the body," neurophysiologist Chad Waterbury said. Do two sets of each exercise, every day or every other day, before your main workout.

One-legged standing drill

"This is a great drill because it strengthens the ankle, knee and hip all together."

Stand on floor with bare feet. Lift one leg and slowly rotate from hip for 30 seconds on each side. Work up to 1 minute. After mastering that, fold a bath towel a couple of layers thick and place under the foot.

Modified pushup hold

"What's great is this strengthens wrist, elbow and shoulder joints," Waterbury said.

Get in classic pushup position if you can hold it, or modify by putting knees on the floor. Then make tight fists so that your wrist joint is perfectly straight and two knuckles of each hand are on the floor as your base. (Place towel underneath each hand for cushion if needed.) Hold position for 35 or 40 seconds, working up to 1 minute. This also boosts core strength.

Four-position neck hold

"There are a lot of misconceptions about how to strengthen neck muscles — a lot of things you see are detrimental to the cervical spine," Waterbury said. A big range of motion is unnecessary.

For the sides of your neck, lie on your side, pick up your head off the floor to a neutral position. Hold for 30 seconds. Switch sides. Repeat.

For front neck muscles, lie on your back. Lift head up slightly from the floor and hold 30 seconds.

For back neck muscles, lie on your stomach. Tilt your forehead so the head is just barely off the floor. Hold for 30 seconds.

"Work up to a 60-second hold for all of these," Waterbury said.

3 muscle exercises

Bent-over hold

Research by Dr. Stuart McGill, a professor of spine biomechanics at the University of Waterloo in Canada, suggests that when people have lower back problems, it's often because their those muscles lack endurance, not strength, Waterbury said.

To build endurance, stand with feet shoulder width apart. Cross arms at your chest. Push your hips back. Let your knees bend slightly so your torso is shifted 45 degrees relative to the ground. Do not round your back. Hold for 30 to 40 seconds. "You want to get to the point where you can hold that position for 120 seconds."

Side plank/modified side plank

"If I could give just one exercise to improve lower-back and core health, it's the side plank," Waterbury said. "It works the side core muscles, which on most people are woefully underdeveloped." He says McGill's research suggests that athletes who can hold the side plank at least 75 seconds are the athletes who are least susceptible to any type of injury on the field. "The thing is, for some people, the side plank is too difficult." If so, try this modification.

Place left elbow on ground and bend knees to 90 degrees behind you, so that left leg from knee down is on floor. Work up to a 75-second hold. Then progress to straightening legs and having your knees off ground (full side plank). Elbow remains on floor.

Foam-roller thigh roll

Many sports require thousands of continuous repetitions. "The joints aren't designed to handle this right away, so people often get injured," Waterbury said. The IT (iliotibial) band that runs from the outer hip to the outer knee can stiffen and lead to knee pain. A simple drill using a foam roller can enhance that tissue health.

Lie on your side atop a foam roller resting between outer thigh and floor. Move yourself across the floor, so that the foam roller rolls from your hip down to your knee. Do two sets of 10 reps a day.