

Gymnastics is hard on the body—physical therapy can help

July 18 2024, by Laura Castañón



Credit: Unsplash/CC0 Public Domain

Watching Simone Biles, Frederick Richard, and other Olympic-level gymnasts compete with gravity-defying flips, twists, and spins across a variety of apparatuses, it's evident how much flexibility and strength the

sport of gymnastics demands. Even at the amateur level, the vault, bars, beam, ring, pommel horse, and floor routines put unique types of strain on the shoulders, back, and other parts of the body.

"You see every type of [injury](#) in gymnastics, from acute injuries like ankle sprains and torn knee ligaments from missed landings to chronic overuse injuries like tendinitis or [stress fractures](#)," said Sarah Gilliland, a visiting professor in the Doctor of Physical Therapy program at Tufts University School of Medicine.

Gilliland was a gymnast through high school and was introduced to physical therapy while recovering from various injuries and strains. She returned to the sport as an adult while she was getting her Ph.D. and her experiences as an athlete—both as a youth and an adult—continue to inform how she thinks about and practices physical therapy.

"I started putting together my understanding of gymnastics as a participant with my knowledge of biomechanics and what that means for us as physical therapists," Gilliland said. "Most providers are familiar with sports like baseball, football, and soccer, but there are fewer [physical therapists](#) who are familiar with the demands of gymnastics and exactly what it needs in terms of range of motion, strength, and power."

Now, at Tufts DPT-Seattle, Gilliland is combining her experience with the sport as a participant and as a physical therapist to help gymnasts and other athletes of all levels recover from injuries and regain the ability to meet the specific needs of their sport.

Avoiding injury

Thanks to advancements in equipment and training surfaces, gymnasts have safer ways to learn and practice challenging moves than they used to. Foam pits, tumble tracks, and rod floors allow gymnasts to build up

knowledge and confidence in a skill before trying it on a competition floor. As a result, gymnasts experience fewer serious acute injuries these days, Gilliland said.

This equipment also helps absorb some of the stress that gymnasts put on their joints that can lead to overuse injuries. When landing a vault or dismounting from bars, gymnasts can generate forces more than 10 times their [body weight](#), and they might practice hundreds of landings over the course of a week. By practicing the majority of landings on a softer surface—and only doing enough on a hard mat to know how it will feel in a competition—gymnasts can significantly reduce the strain on their body.

"There is a slow shift happening in the training culture, integrating more of what we know from [exercise science](#) and sports science in terms of how to get the best performance without pushing the body to the point where it starts to fall apart," Gilliland said.

In particular, Gilliland stresses the importance of rest days and of not trying to do too much too quickly. Muscles need time to recover and strengthen after a workout. Moreover, gymnasts often start the sport very young, when their bodies are still growing and changing. Coaches and parents need to make sure young gymnasts take things slowly and have the recovery time they need.

"No one in gymnastics at any level should be training seven days a week," Gilliland said. "And high level gymnasts who are training six days a week need to have really good recovery mechanisms built in. Otherwise, if you keep doing that level of training continuously, your body just starts breaking down."

Listen to your body

If a gymnast is having pain, they should get it looked at as soon as possible. Some amount of soreness after a challenging workout is normal, Gilliland said, but it's important for athletes to be able to differentiate between tired muscles and pain. And for caretakers of young gymnasts, it's important to listen to how kids talk about their gymnastics practice and to take possible aches and pains seriously.

"Gymnastics had a really toxic culture, where athletes just tried to grin and bear it and work through pain, but it's becoming more accepted for gymnasts to admit they have an injury and get treatment for it," Gilliland said.

Gilliland recalls ignoring a pain in her knee for months when she was a young gymnast, assuming it would eventually get better. Instead, she got to the point where the knee was giving out any time she landed on it. Her eventual recovery took much longer than it would have if she had addressed the problem right away.

"For athletes at all levels, if something starts feeling wrong, get it checked out sooner rather than later," Gilliland said. "If you can get treatment, maybe back down your training just a little bit and do a proper ramp up, you can nip it in the bud and move forward before it becomes a real problem."

Build sport-specific strength

After any injury, whether it's acute or chronic, it's important to slowly build back strength and range of motion. For most people, the goal is to get back to normal life without pain. But for gymnasts at any level, the average person's "normal" isn't going to be enough.

"This is the part where it becomes really important for a gymnast to be working with a physical therapist that understands gymnastics," Gilliland

said. "I've seen this in other sports as well—someone gets to the stage where they can handle regular life and the physical therapist says, 'ok, go back to your sport' and they immediately re-injure themselves because their body wasn't ready for that level of force."

A physical therapist that is familiar with gymnastics—and the types of gymnastics equipment available to reduce the force on a recovering injury—can help ensure that gymnasts rebuild the power they need to participate in their sport fully and avoid similar injuries in the future.

"With any activity you do, whether it's recreationally or training for the Olympics, you have to progressively build up," Gilliland said. "If you increase the load in a thoughtful, progressive way, your body can get stronger. But if you take too much load too soon, the tissue isn't ready for it and that's when you get injuries."

Provided by Tufts University

Citation: Gymnastics is hard on the body—physical therapy can help (2024, July 18) retrieved 18 July 2024 from <https://medicalxpress.com/news/2024-07-gymnastics-hard-body-physical-therapy.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.