

# Can Exercise Make Cancer Therapy Work Better?

by Lee Jones, PhD

Memorial Sloan Kettering Cancer Center



Exercise while you're going through chemo? To most people the idea seems crazy. To Lee W. Jones, it seems crazy not to.

Jones has a PhD in exercise science and physiology and conducts experiments at a lab at Memorial Sloan Kettering Cancer Center. "After chemo people are typically told to rest, and it's quite possibly the worst advice we could be giving," he says. He points out a similar trend in cardiology. "Fifty years ago if you talked about exercising after a heart attack, they'd say you were nuts. They thought your heart would explode. The recommendation was six weeks of bed rest. But now you're told to go out an exercise the day after your heart surgery."

In the late 90s when Jones started his PhD he decided to research the effects of exercise for cancer survivors. "There were all these people who had survived cancer but were beat up by their cancer therapies," he says. Could exercise help mitigate the effects of cancer therapies? Turns out, yes—it helps tremendously.

"For a woman with breast cancer who undergoes a standard course of chemotherapy, her fitness will decline 10-20 percent over four months," Jones explains. For context, Jones points out that in a normal situation over 10-20 years of aging, you'd expect to see that same level of decline in fitness. "So basically four months of chemo equals 10 or 20 years of aging," he says. "When people say they feel like they've aged a decade after chemo, that's why."

Jones believes exercise can improve the quality of life for cancer survivors, help people tolerate their cancer therapies better, and even possibly prevent cancer in the first place.

He recalls one person who came to the lab five years ago. "He was young, late 40s or early 50s, and had been diagnosed with pancreatic cancer, which is typically a death sentence. We did some assessments and recommended an exercise protocol for him. Typically you see a 10-20 percent decline in fitness for someone undergoing chemo. In this person we actually saw a 20 percent improvement." The man just recently had his five-year post-diagnosis anniversary. "Of course I don't know how it's going to be long-term for this person, but to be part of his journey was absolutely incredible," says Jones.

Looking ahead, Jones says, "I think we're on the verge of something very special." Instead of the standard approach to clinical trials—have one group that exercises and one control group and compare outcomes—he wants to get much more customized. Because, he points out, "If you give the same exercise prescription to 50 people you'll get 50 different responses. We want to understand individual response. If you go for cancer treatment today, they'll sequence your tumor and give you therapies based on that. I think we need to take same approach with exercise. Can we customize exercise to maximize outcomes for cancer prevention and recovery?"

If anyone can answer that question, it's Jones. He has an impressive track record of winning federal grants to fund a constant stream of research: \$17MM in the eight years he's been at Memorial Sloan Kettering. The key to all that funding, he says, was a gift from a private foundation. A foundation in Norway gave him \$2MM of unrestricted funds when he first started. "That allowed us to do the pilot projects, so then we had exciting things to demonstrate in order to get the federal grants," he says.

Jones is happy to speak with anyone interested in knowing more about specific research projects or areas of exercise oncology.

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