

Transcript Details

This is a transcript of an educational program. Details about the program and additional media formats for the program are accessible by visiting: <https://reachmd.com/programs/project-oncology/exercise-in-multiple-myeloma-balancing-benefits-and-safety/30050/>

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www.reachmd.com
info@reachmd.com
(866) 423-7849

Exercise in Multiple Myeloma: Balancing Benefits and Safety

Announcer:

You're listening to *Project Oncology* on ReachMD. On this episode, we'll learn about exercise interventions for patients with multiple myeloma from Dr. Jens Hillengass, who's a Professor of Oncology and the Chief of the Myeloma and Amyloidosis Service at Roswell Park Comprehensive Cancer Center in Buffalo, New York. Let's hear from him now.

Dr. Hillengass:

The trigger to do this study actually happened many years ago when I spoke with patients, and they brought the idea to me because myeloma is now much more treatable than it was 10 or 20 years ago, where patients passed away after one, two, or maybe three years. Nowadays, they live five, seven, eight, or 10 years or longer. And so my patients who were in remission, feeling well, and going back to work were asking me, "Can I also go back to the gym?" And that was something that intrigued me, and I thought, that's an important part of life and quality of life. So I said, "I would love for you to work out," because we know there are a lot of benefits of working out, including strengthening the immune system, muscles, and maybe even bones. But that was the problem, because multiple myeloma causes lesions and holes in the bones with fracture risk. We always said, "Don't do too much" and "Don't stress your skeleton." And so we said, "Okay, there's not much data out there." There was some data around the stem cell transplant, but those patients were inpatient; they were in a very safe environment and there was a physical therapist present. So what we said was, "Okay, we need some data on what our patients can do safely." So the primary endpoint was really safety: to see if those patients get any fractures or if they experience any harm from working out.

Since we thought that a major effect should be on the bones, we chose one arm of the study, and then the patients could choose. It wasn't randomized. One arm of the study was an in-person resistance training in our physical therapy department. Patients were working out on machines—warming up on treadmills or on ellipticals—and then they had an hour of strength training supervised by a personal trainer. That was the one arm. And we gave the other arm to some patients, especially patients who were from further away and said, "I cannot drive to the hospital twice a week," because we said twice a week for one hour each for six months. And so some patients said, "I would love to participate, but I can't because it's just not feasible for me." So what we did was we gave them and the other group Fitbits for fitness tracking, and the patients got a prompt every day to increase their daily steps by a certain amount, and the goal was to bring them to the recommended steps or active minutes that the American College of Sports Medicine recommends. Those were the two arms. And then we checked certain markers at baseline after three months, six months, and one year because we wanted to see if the patients can sustain these changes that we hoped to achieve.

So what we looked into was quality of life. We asked them questions about depression, anxiety, and fatigue, which is a big deal in myeloma pain. We also did physical therapy assessments like a sit-to-stand test where the patients had to get up from a chair, and we measured how often can they do that in 30 seconds. We did a 6-minute walk test—so we looked how far they get in six minutes—and a few other tests. And with the Fitbit, we saw their steps, sleep, and other things that it would provide. And what we found is that we saw improvements in functional assessment, so the patients were in better shape afterwards, could do the sit-to-stand better, and could do the 6-minute walk test better after six months. Unfortunately, we saw that this went down again after the follow-up when they did not have these appointments with a personal trainer in our physical therapy department. That was a big deal.

What we were also interested in is if there's an effect on the immune system because there has been some data in, for example, solid tumors that the immune system improves with physical activity, and we wanted to see if that in an immune cancer like multiple myeloma is also relevant. And so we measured with flow cytometry immune cells before and after intervention, and we did actually see an improvement in the area where the T-cells were less exhausted. There's something called T-cell exhaustion, which comes from the

myeloma and treatment, and we could see that markers of this exhaustion changed over time and improved, which is super important because most of our myeloma treatments nowadays are actually using the T-cells to do their job—to kill the myeloma cells—so we're very intrigued by that. And now we're doing a bigger study where we do similar examinations based on our pilot data and want to confirm what we have found.

Announcer:

That was Dr. Jens Hillengass discussing how exercise interventions may benefit patients with multiple myeloma. To access this and other episodes in our series, visit *Project Oncology* on ReachMD.com, where you can Be Part of the Knowledge. Thanks for listening!