

# Intestinal Rehabilitation: Multidisciplinary Approach to Care

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Long-term use of total parenteral nutrition (TPN) can cause life-threatening complications. Patients that rely on TPN benefit from programs such as Intestinal Rehabilitation, with the end goal of weaning them off TPN and thus improving their quality of life. Creating a multidisciplinary team of dedicated surgeons, psychologists, nurses, dietitians and social workers can help enhance the outcomes for patients battling intestinal failure.

During this session hear from Joel Lim, MD on the importance and success gained from having a multidisciplinary approach in caring for pediatric patients with intestinal failure.



Featured Speaker:

**Joel D. Lim, MD**

Joel D. Lim, MD is a pediatric Gastroenterologist. His specialties include Intestinal Rehabilitation and Transplant and Short Bowel Syndrome.

**[Learn more about Joel D. Lim, MD](https://www.childrensmercy.org/templated.aspx?id=2698&doc=7775)**

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Transcription:

Dr. Michael Smith (Host): Our topic today is "Intestinal Rehabilitation: A Multidisciplinary Approach to Care". My guest is Dr. Joel Lim. Dr. Lim is a pediatric gastroenterologist and Director of Nutrition Support and he specializes in intestinal rehabilitation. Dr. Lim, thanks for coming on the show.

Dr. Joel Lim (Guest): Thank you very much. Thank you for inviting me to give this interview today.

Dr. Smith: Sure. Thanks for coming on. Let's start off with this: intestinal rehabilitation. What exactly is that? What exactly does that mean?

Dr. Lim: Well, intestinal rehabilitation is, basically, we're trying to rehab the children who have lost the function of their small bowel. It means that they cannot actually absorb nutrients by mouth because of some underlying problem. And, I say "by mouth" but it's through the intestinal tract, too. Therefore, we try to rehab these patients so that they can use their gut again to absorb food. So, basically, they don't eat anything by mouth. They are completely fed through the veins.

Dr. Smith: And so, what are some of the conditions that lead to that and require intestinal rehabilitation?

Dr. Lim: Most of these patients end up having resections during their infancy. The most common would be necrotizing enterocolitis and other ones would be congenital, like gastroschisis, intestinal atresia, and sometimes motility disorders like Hirschsprung's disease. Those that are pretty extensive.

Dr. Smith: And so, the goal of intestinal rehabilitation, as you said, is to get the small bowel to do its job basically, right? To function and absorb the nutrients. What kind of timeframe are we talking about here? Obviously, this is critical, right? You're talking about a child who is growing in every sense of the

word, or needing to grow in every sense of the word and really need that nutrition. So, what type of outcomes have you had with this? What kind of timeframe are we looking at to get the bowel working again?

Dr. Lim: Well, most of the patients that we get are those who have had extensive resections of their bowels. Most of them have lost maybe 50-70%. We even have patients who only have ten to twenty centimeters of small bowel left. So, the timeframe and rehabilitating of these patients can take months to even years. We even have patients who have been under what we call "total parenteral nutrition", for the past three or four years. But, we have very good outcomes. We have patients who have had twenty centimeters of small bowel, even with five centimeters of colon, be weaned off total parenteral nutrition. They're completely fed through the mouth now or through a G-tube and enterally fed. So, we have a very good success rate in trying to actually rehabilitate these patients. We do it with a multi-disciplinary team.

Dr. Smith: So, why don't you run through exactly how you rehab the intestines here. What is the actual process to eventually get the bowel to function better? What actually happens during a patient's care?

Dr. Lim: They start off having surgery or being born with a congenital problem that their gut doesn't function. So, what we typically do is we feed them through the veins through total parenteral nutrition. Once they're stable enough, then we actually start feeding them very slowly, usually from one ml an hour to two mls an hour, until we get to a point that we are able to take them off total parenteral nutrition. And, of course, we're waiting for their bowels to adapt and stimulating their bowels slowly also helps in the rehab of these patients. And, of course, we also have medications that help us and also, sometimes, if need be, surgical procedures that will also lengthen their bowels. These are all in our armament to actually help with these patients. One other key thing, too, is the type of nutrients that we actually feed these patients. They're on specialized formulas initially so that they can absorb these nutrients more efficiently.

Dr. Smith: Who's actually involved in all of this? We're calling this a "multi-disciplinary approach". Who's involved in the intestinal rehabilitation?

Dr. Lim: Well, that's a very interesting question. We have a lot of persons involved and, before I start, I would like to let you know that studies have actually shown that, to have a good success rate, most of these patients need to be plugged in to an intestinal rehabilitation program. So, these programs usually consist of a pediatric gastroenterologist like me; a pediatric surgeon; a pharmacist who will take care of the TPN; and a dietician or nutritionist who will take care of the caloric needs. We have a nurse that specializes in central lines, G-tubes and feeding apparatuses that would be needed by these patients. We also have a nurse practitioner to help take care of these patients and we have a social worker that helps with the social needs of these patients. More importantly, we are one of the major centers that have their own psychologist because we have realized that these are very sick patients that actually have a lot of stress in the patient itself and also in the family. The way intestinal rehabilitation is going right now, most of these patients who have had death sentences like three or four years ago are now having chronic diseases. So, they are now expected to live and, therefore, they have a lot of stress factors and we have seen that a psychologist really helps in having them cope with this chronic disease. Not only them but also their family.

Dr. Smith: So, backing up, before there was this type of multidisciplinary approach in which you just said that this study shows that this does improve outcome quite significantly. Right? What was the outcome prior to this for these patients?

Dr. Lim: Well, most of these patients would actually end up being transplanted, which is actually part of intestinal rehabilitation but a lot of them didn't survive. Most of them would end up dying from line infections or dying from liver disease, which are also complications of these types of patients. So, in the past couple of years, we've actually been able to rehabilitate more and more patients with shorter and shorter bowels.

Dr. Smith: The outcomes have obviously improved. So, we're seeing less deaths from liver disease, the infections, etc., right? Is this approach, this multi-disciplinary approach that you guys are doing at Children's Mercy, becoming the model for other medical centers throughout the country?

Dr. Lim: Yes, this is. There are very few intestinal rehabilitation programs that are currently in the United States and we are one of the intestinal rehabilitation programs that are having good success with our patients. We do collaborate with all the other different centers because this is a very small field that most of us are all working with each other to actually help these patients.

Dr. Smith: Well, Dr. Lim, I'm going to thank you for the work that you're doing in the Intestinal Rehabilitation Center at Children's Mercy and I want to thank you for coming on this show today. You're listening to Transformational Pediatrics with Children's Mercy Kansas City. For more information, you can go to [ChildrensMercy.org](http://ChildrensMercy.org). That's [ChildrensMercy.org](http://ChildrensMercy.org). I'm Dr. Mike Smith. Thanks for listening.

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