

SECOND EDITION

ROWING STRONGER

Strength Training to Maximize Rowing Performance

BY WILL RUTH

Reviews of Rowing Stronger, Second Edition

Rowing Stronger is an essential primer for coaches and athletes alike for addressing all of the peripheral, yet requisite elements for rowing performance and longevity. This is a must-read for coaches of every level, and I will be reviewing it every year for ways to improve my program!

— CAITLIN MCCLAIN

Will has constructed a fantastic handbook for rowing preparation, useful for both athletes and coaches alike. The book outlines how to structure a preparation program to complement rowing-specific training, and provides a clear path to writing a program that fits your needs. I refer back to this book yearly when writing the annual plan for the WWU Women's Rowing team, and have seen first-hand how effective the programming principles in this book are.

— DAMIEN FISHER

A great updated guide to strength training within the framework of block periodization. All the sections that existed in the first version felt more accessible with the reworking, plus the new guides for mobility assessment and more. Although the book does not come with an entirely pre-written program, it does have sample programs and is designed around the principle of “teach a man to fish.”

— ERIC DELACORTE

Will Ruth has written the pre-eminent handbook on strength training for the rowing athlete. *Rowing Stronger* skillfully guides the athlete and coach through the science of weight training; tricky concepts are made clear, and once lofty end-goals become obtainable. With the advice of Will's work, every one of my RowPhysio PT athletes now benefits from being stronger and more injury-resilient athletes at any age and skill.

— GREG SPOONER

Rowing Stronger is my go-to book for masters strength training. Fast boats are a priority for my athletes so having this detailed approach with targeted exercises is a must. A solid strength foundation keeps Roylerowers powerful, healthy, and on top of the podium in world class events. Follow Will's program and its guaranteed to boost your boat speed stroke by stroke. Highly recommended.

— MARLENE ROYLE

This 2nd edition is thorough and detailed enough to satisfy both athletes and coaches. There were a number of concepts I previously struggled with that Will explains with clarity and descriptive examples. The material is clear, easy to read, highly practical, and a very interesting read. There are a number of things that I can put into practice right away in my training as a masters rower.

— MIKE HUET

The second volume of *Rowing Stronger* includes detailed programs as well as explanations on how to write your own programme. Interestingly, Will explains how he has reduced the volume in his training and seen improved results. I also appreciate his careful explanations of transitioning between blocks and the whole chapter dedicated to masters athletes.

— REBECCA CAROE

I'm the strength coach for a big group of junior rowers. Over the years, I've gotten to know many exercises, tools and trends, but I got more and more confused with the specific demands of rowing and how to best train them in the gym. Then, I found Will's website and book. The new version is even more extensive, detailed, and leaves no questions unanswered. Will is a rower who thinks and feels like a rower and who writes for rowers and rowing coaches. There is nothing better!

— RENATE PODESSER

Will Ruth makes a valuable contribution to the sport of rowing with his comprehensive guide to strength and conditioning. This is a far cry from the usual one-size-fits-all training formula. Ruth details how individual athletes can use block periodization to create a program tailored to their individual needs based on age, weight, and competitive goals. He provides abundant information on specific exercises and how they fit into an overall strength training program. Any athlete or coach interested in minimizing injury and optimizing race performance would do well to read this book.

— SARAH RISSER

If we simply repeat what we've done, can we expect to get better? Will Ruth believes that we can all be better, if we get stronger, both physically and mentally. From gym to race day and all points in between, that only comes from an intelligent and rowing-specific approach to preparation. I found this helpful as a rower, coach, and parent of a high-performing rower.

— SHAUN ELLIS

Will has created a comprehensive, valuable and easy to follow guide to maximizing any boathouse crew's performance potential. He takes great care in emphasizing technique, safety, and planning for a successful year. As a masters coach, it will no doubt serve as an essential tool to guiding my masters in body and spirit to a mighty season!

— TARA MORGAN

What's New in the Second Edition?

WHETHER YOU BOUGHT THE FIRST ONE or are a brand new reader, thank you for buying the second edition of *Rowing Stronger*!

I've coached, written, and learned a lot since first publishing *Rowing Stronger* in 2015. I'm constantly reevaluating my programs and trying to find better ways to build stronger, faster, healthier, better rowers based on results, athlete feedback, and the latest research.

My general approach to using the block periodization system for rowing is still similar to what I wrote in the first version. However, I have consistently decreased the volume of strength training and found equal, or better, results in strength, power, and rowing performance, and I've adjusted the recommended sets and reps accordingly throughout the book. I have also added several new exercises to the exercise index and throughout my programs that I highly recommend for rowers. I still think the barbell is a great tool, but I now tend to include more exercise variety depending on the athlete, available equipment, and goals of training.

The biggest difference from version one is simply more content. In addition to some entirely new sections and chapters, I went through the entire book to update every section and add detail and clarification wherever necessary. I've also included some of the most popular article series from my website, "Mobility for Rowers" and "Mental Skills for Rowing," so you can keep those in one place for quick referencing.

I'm very pleased to be able to share the coaching of fellow rowing strength coaches Blake Gourley and Joe DeLeo in their guest chapters on movement assessments and kettlebell training. Blake, Joe, and I started the Strength Coach Roundtable podcast in 2016, and we have spent a lot of time talking on and off-air about how we can improve our coaching to help more rowers get stronger, healthier, and faster.

I have also included sample programs for each block of training, and templates you can use to build your own program. I didn't include this in the first version, because I was worried that readers would jump straight to the sample program instead of learning how to program for themselves and writing a program for their own personal goals, abilities, schedule, and equipment. However, I got a lot of requests for it, and I think it fits the educational goal of this book to demonstrate how the concepts from each block come together to create a training program.

I have worked a lot more with masters strength training since the original, and I greatly expanded the "Strength Training for Masters" chapter. In addition to an overview of training, you'll find an annual periodization template, a description of how each month of training can build towards your racing goals as a masters rower, and more.

I hope you enjoy this second edition, and that the knowledge contained within helps power you to new heights in your rowing training, performance, and career.

In Strength,

Will Ruth

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Introduction

ROWING IS UNIQUE AMONG OLYMPIC SPORTS in its demand of strength, endurance, and technique under intense amounts of fatigue, yet most training programs treat rowing as though it were purely an endurance sport. Those programs neglect the development of strength and power in favor of more meters, more miles, and more aerobic system training. This overemphasis on one area of training, and neglect of another, leaves much room for improvement. Increasing your strength through an intelligent system of training delivers power to your rowing stroke, improves endurance, and can reduce your risk of injury, keeping you in the boat for more consistent training and better performances. The intelligent approach is key, and as a former rower and current coach, I have made and seen many mistaken and unintelligent approaches ranging from mimicking the programs of elite rowers, to training rowers like bodybuilders and powerlifters, to doing some truly insane combinations of workouts in hopes of making improvement.

I have five goals for you after reading this book.

#1: You will understand why strength training is crucial for continued improvement in rowing, both to improve performance as well as reducing risk of common rowing injuries.

#2: You will be able to write your own annual periodized strength training program to

support your rowing training and achieve your goals for each season.

#3: You will know which exercises to do in the weight-room, why you are doing them, and how to structure them in a strength training session.

#4: You will be able to make adjustments to your training, evaluating areas for improvement and developing a plan for improving them. While I do include a sample program at the end, this is not a “just add water” program to follow blindly. You will learn how to program and adjust your training to suit your individual goals, needs, and equipment.

#5: You will understand that there is more to strength training than just exercises, sets, and reps, and that there are many ways beyond just sport and strength training, such as mobility, mental skills, and more, to improve rowing performance, reduce risk of injury, and enjoy longer, healthier rowing careers.

The cardiovascular system is your foundation of endurance; the muscular system is the ceiling.

The Top-Down Endurance Approach

The first key concept of rowing stronger is understanding why you should use strength training to build strength, and the water, erg, and cross-training to build the foundation of endurance. This is what I will refer to as the “Top-Down Endurance Approach.”

The goal of the top-down approach is to improve the rower’s maximum force potential to make the force required from one rowing stroke a smaller percentage of maximum force, and thus easier to endure for longer time and distance. Increasing your strength decreases the amount of effort required per stroke, which increases your endurance. You are stronger, so each stroke requires less effort to pull the oar through the water, therefore you can maintain that pressure for longer. The cardiovascular system is your foundation of endurance; the mus-

cular system is the ceiling.

Research suggests that one stroke at 2km race pace requires approximately 150lbs of force. The most common, though less effective, way to increase rowing endurance at that intensity is by doing high-rep endurance sets on squat or deadlift with around 150lbs. Instead, the top-down system uses lower reps and a focus on strength and power to make 150lbs a smaller percentage of the rower's maximum potential output, improving endurance by reducing per-stroke effort. We seek to build a rower's maximum squat or deadlift from 175lbs (150=85%) to 225lbs (150=66%), to 275lbs (150=54%), to 315lbs (150=47%), all while continuing endurance work on the water or erg via the usual rowing workload of thousands of meters per week. Endurance and strength thus develop in parallel over months and years to produce a powerful rower capable of sustaining great pressure for race distances.

For more on measuring rowing strength, see: Lawton, T., Cronin, J., & McGuigan, M. (2011). Strength testing and training of rowers: a review. *Sports Medicine*, 41(5), 413-432.

"Strength endurance training without adequate strength only means you are getting better at being weak."

– Ed McNeely

The top-down approach is especially important with athletes who are new to rowing, strength training, or both. Even rowers with years of rowing experience often have not had a structured and supervised strength training program. An approach of high-rep isolation machine exercises fails to teach the new trainee how to use their body and muscles in a coordinated way that will transfer to the dynamic sport of rowing. The high volume inherent in these light "endurance" circuits can also cause overuse injuries and muscular imbalances. Additionally, a rowing program can have heights ranging from 5'3 females to 6'8 males, and generic commercial exercise machines are not built for this range of athletes. is exposes athletes to further risk of injury with ill-fitting and ineffective machines that place tension on

vulnerable parts of joints, muscles, and bones.

Training with lower repetitions also allows an athlete to focus fully on executing every rep with proper technique and power. Mental focus deteriorates in high-rep sets, which leads to ineffective training, as well as potential injury resulting from a lapse in focus or breakdown in technique. Performing powerful and controlled repetitions in the two-to-ten rep range yields the most benefit from each exercise, effectively and efficiently builds strength, and reduces the injury potential of longer, high-rep sets of 20+ reps.

The top-down approach also reduces another chronic risk for rowers and endurance athletes—overtraining. Ask a competitive rower what their typical week is like, and it'll be at least 10 hours on the water or on the erg, 2-4 high volume lifting sessions (if any weight-room training is done at all), and 1-2 high volume cross-training sessions thrown in. This is a lot of mileage on the ankles, knees, and hips. Sitting in a boat or on an erg for 12+ hours a week, running, cycling, and lifting weights for high reps with sloppy technique, can combine to cause postural problems of the mid-back, shoulders, and hips. All of this training is then combined with student or typical employee responsibilities of sitting down to study, work, and commute, compounding these same postural problems. Added all up, injury or sickness commonly results in the overtrained athlete whose body is unable to recover from chronic or escalating stress. Overtraining can also have a detrimental effect on performance, causing lack of motivation to train, decreased cardiac output, higher resting heart rate, and even depression-like symptoms at the acute level. We'll discuss this more in the "Over-Training or Under-Recovering" chapter.

The system of strength training that I use with rowers is based around training sessions that are faster, more efficient, safer, and more effective for the goal of building better rowers. Athletes perform exercises to improve rowing performance, as well as exercises for specific target areas to reduce risk of common rowing injuries. We use squat variations for the legs, deadlift variations for the posterior chain muscles, overhead pressing for the shoulders and mid-back, rowing exercises for the back muscles, and bodyweight, odd object, and minor assistance exercises to reduce risk of injury and improve muscular

balance and overall athletic coordination.

“Main work” consists of strength or power work, using large muscle groups and compound exercises to increase strength to improve endurance over the long-term via the top-down approach. We then use “assistance work” for secondary goals, such as muscle size, strength, and injury reduction through exercises for targeted muscle groups.

We tend to use assistance work primarily to focus on building the muscles that rowing fails to develop through rowing training alone. There is much more detail on this in the “The Exercises” chapter. Lack of strength in the postural muscles of the mid-back is one of the main causes of the rowing hunchback. Look for rowers at your next regatta with internally rotated “caveman” shoulders and the “turtleshell” mid-back. It is likely that these athletes experience shoulder or mid-back pain, and leave power on the table at each stroke by slumping or caving at the finish. Sweep rowing causes even greater imbalances by putting greater reliance on one side of the body. It is imperative that these imbalances are corrected to restore bilateral (left/right side) balance as well as anterior-posterior (front/back) balance. This will improve comfort at achieving key rowing positions, improve performance with every stroke, and minimize the risk of overuse injuries while rowing and later in life.

I actually consider reducing risk of injury as THE primary benefit of an intelligent, appropriate, and rowing-specific strength training program, with performance improvement second. This is contrary to the beliefs of most, but I can explain why with a simple question. Does it matter how strong or how fast you are, or how great your endurance is, if you hurt too much to display it? What if you have the best fitness and can out-run or out-cycle everyone on your team, but due to a shoulder injury, can't row in the big race? What if you have the best technique in the boat, but can't race or go 100% because of a hip injury?

All of this boils down to a simple, two-pronged approach.

#1: Reduce risk of injury by developing muscles and movement patterns that rowing alone neglects.

This keeps athletes in the boat longer, and more productively. This provides more time to practice technique and gain opportunities to improve in the sport. This can earn the athlete a longer, healthier, and more successful career as a rower.

#2. Increase your strength to decrease the amount of per-stroke effort, improving your endurance and your rowing performance.

Please note that all of the following information about programming and training will not help you if you cannot, or do not, perform the exercises correctly. If you do not have a coach or trainer working with you regularly, I recommend at least a few introductory sessions with a qualified personal trainer to learn the basics of the exercises in this program. Performing any kind of training incorrectly can lead to injury, or at least failure to fully reap the benefits of that exercise. It is of the utmost importance that all exercises are performed safely and correctly at all times. None of the following is medical advice and it is recommended that you consult a medical professional before undergoing any physical training regimen.

About the Author

I PLAYED SEVERAL SPORTS GROWING UP, but I come from a family of rowers and knew it was only a matter of time until I picked up an oar as well. I did my junior rowing in Olympia, WA, and then tried my hand at lacrosse when I came to college at Western Washington University (WWU). I majored in Kinesiology at WWU with an emphasis in Sport Psychology, and started getting involved with coaching during my junior year on a year-long internship with the varsity track and field team. I started coaching the men's rowing team in 2013 in small groups around my class and coaching schedule, before officially joining the coaching staff as team strength coach and on-water assistant coach. I will graduate from the University of Denver in 2019 with an MA in Sport Coaching. I have held strength training certifications with USA-Weightlifting (Level 1) and the National Strength and Conditioning Association (NSCA-CSCS), as well as US-Rowing (Level 2).

I started writing online in 2015 because I believe that strength training plays a significant role in getting the most out of rowing from a performance, injury reduction, and longevity standpoint. My goal is to help everyone get stronger so they can row faster, healthier, and longer. You can find more of my written work, podcasts, and videos online at my website, www.RowingStronger.com. I do training consultations, coach and athlete workshops, and online programming, and I am always happy to answer questions and talk about strength training for rowing. Please email me anytime via the contact information available on my website.