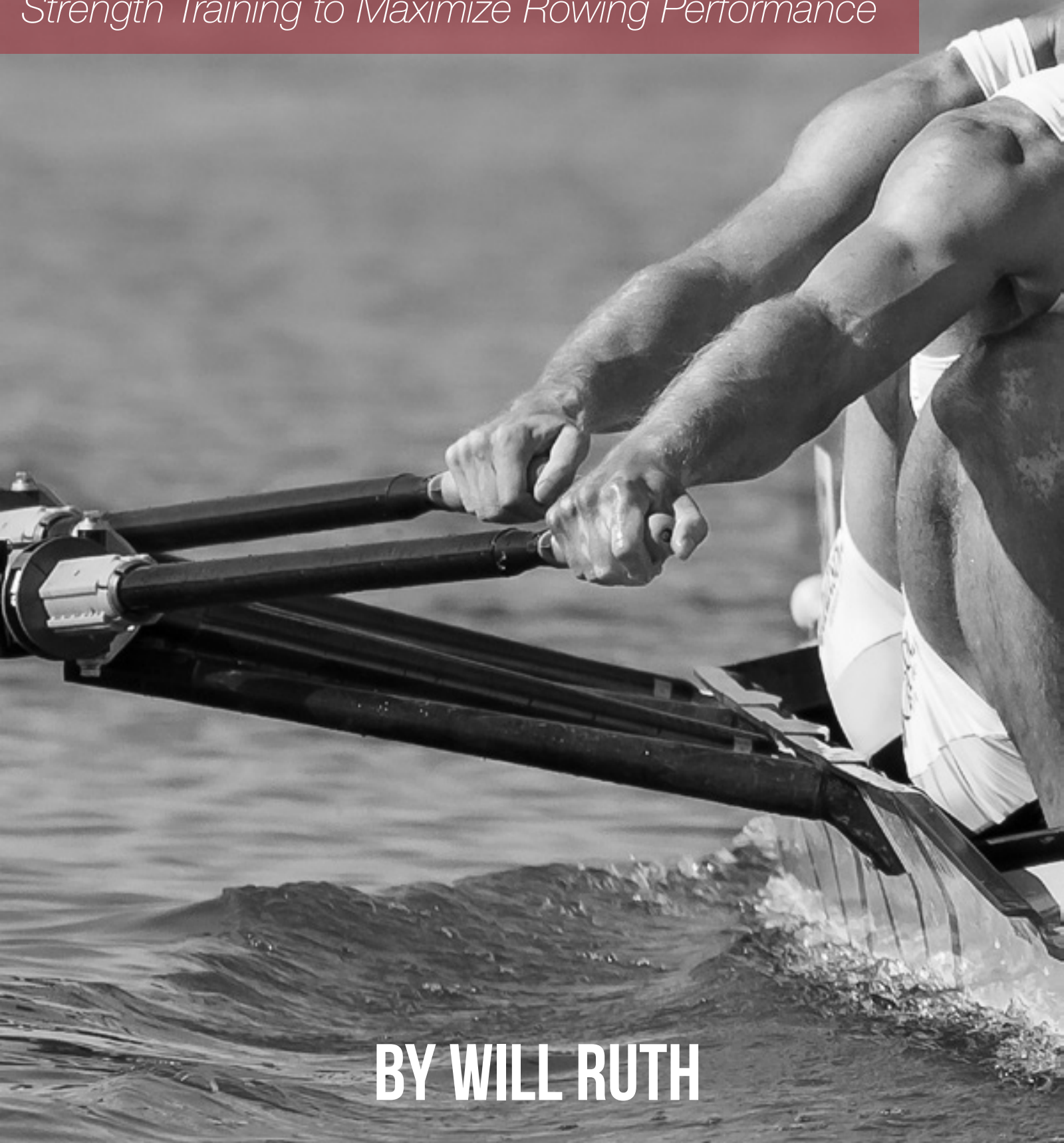


# ROWING STRONGER

*Strength Training to Maximize Rowing Performance*



**BY WILL RUTH**

# REVIEWS OF *ROWING STRONGER*

*“Will’s program filled the weight training gap that we had always downplayed and treated as an afterthought. Now that I have seen the results over the last two years, it’s a shame we weren’t working with him earlier! Biggest improvements have been in our beginning and ending sprints, as well as power moves over a 2k race. Guys have a deeper well of power to draw from and it hasn’t come at the cost of aerobic capacity.”*

**Jack Marolich, Western Washington University Men’s head coach (USA)**

*“Will’s strength training program played a huge role in the improvements that I saw throughout my junior and senior years. During the first year on his training I saw an 8 second improvement on my 2k erg PR (concept 2) compared with a 3 second increase in the prior calendar year as well as notable improvements in my overall body strength, flexibility, and energy levels.”*

**Carl Smith, Western Washington University and Vesper Boat Club rower (USA, 2015), World University Games 4- 2015**

*“This is fantastic. This is the best lifting-for-rowing program handbook that I have ever seen, and is so incredibly helpful. I would definitely be able to write a program for myself, or my team, using this guide. I always wished something like this existed. I’m so glad it finally does!”*

**Haley Yeager, University of Washington rower (2012), Atlanta Junior Rowing Association coach (USA)**

*“Really well laid out, the level of detail is extremely high but can also be understood by anyone with any range of knowledge on the subject. The arguments made are well-thought out and researched and provide solid alternatives to the traditional programme or at least a chance to alter some areas of training. All in all it was a very good and easy and informative read which I personally will use when in the gym.”*

**Harry Richardson, Tideway Scullers School Junior Rower (UK)**

*“Having worked on putting together a rowing specific programme for rowers, it has been difficult tracking down rowing specific exercises and even harder to get information for the masters weight training. This is a great resource for any trainer or rower to have.”*

**Jacqui Jones, REPS Level 3 Advanced Fitness Instructor, Marlow Rowing Club (UK)**

*“Rowing Stronger” is packed with information relevant to rowing coaches and athletes. It clearly explains the nuts and bolts of how to effectively utilize block periodization to build a training program for rowing. Ruth draws parallels between the approach of many rowers to explain core strength training concepts. As a coach, it’s impossible to ignore the implications for increased mobility and reduction in injury.”*

**Colin Heneghan, Dartmouth College rower (2012), Los Gatos Rowing Club coach (USA)**

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# INTRODUCTION

**R**owing, unique among Olympic sports, requires both strength and endurance—yet most training programs focus on the latter. Balanced, progressive strength training delivers power to the rowing stroke and protects the athlete from injury. As a coach, I have seen many mistakes in strength training, from mimicking the programs of elite rowers to trying to train athletes like bodybuilders and powerlifters. I wrote this manual with the goal of creating a comprehensive guide to strength training for rowing that would help a reader learn how to put strength training principles to work without spending hours sifting through multiple incomplete books, websites, and articles. The simplest effective method of periodization for strength training is the block periodization system. There are many forms of periodization and many more systems for strength training, but this is the building block for programs that effectively integrate strength training

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

***- Ed McNeely***

into a comprehensive program for rowers.

My goal in writing this manual is to provide a solid understanding of the fundamentals of the block periodization system and how to put them to work for an athlete or team. This is not a “just add water” program to follow blindly. You will learn how to program and adjust your training to suit your needs, individual situation, and equipment availability. The Top Down Approach will enable you to put the “power” in a “power ten.”

## ***The Top-Down Endurance Approach***

I believe in using the water, erg, or cross training to build the foundation of endurance while using the weight-room to build endurance from the top-down. The cardiovascular (CV) system develops faster than the muscular system, and is the foundation of endurance, while the muscular system takes longer to develop, but represents the ceiling of ultimate ability.

**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 their maximum force, and thus easier to endure for longer time and distance.**

Let’s assume that one stroke requires 300lbs (136kg) of force, about half of which will be produced by the legs, so one stroke would equate to roughly a 150lb squat [1]. The most common, though ineffective, way to increase rowing endurance at that intensity is by doing high-rep endurance sets of 20+ reps with 150lbs. By contrast, the goal of the top-down system would be to

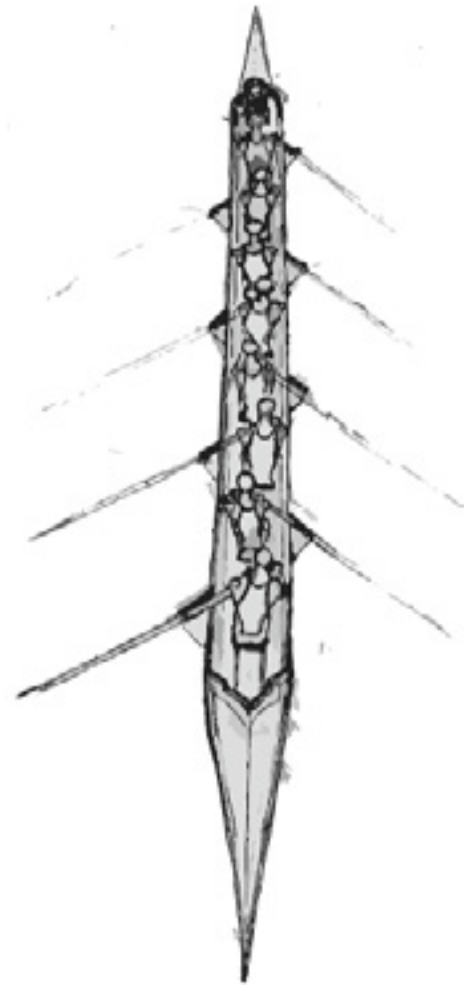
build high-end power from a junior rower's squat max of 175lbs (150=85% of 175) to a university rower with a max of 315lbs (now 150=47%), WHILE continuing endurance work on the water/erg via hundreds or thousands of strokes per week. Endurance and strength thus develop in parallel over months and years to produce a more effective rowing stroke.

The Top-Down Approach is especially important with athletes who have a young training age. "Training age" doesn't refer to chronological age, but rather the years an athlete has trained a given activity. If a rower arrives at college and has rowed since high school, their rowing training age might be five, but their weight-training age might be zero or one if rowing has been their sole activity. Many rowers, especially high school and college rowers, have not had a structured and sufficiently supervised weight-training program. The absolute last thing a new trainee should do is a program of high-rep isolation exercise circuits. Not only does this approach fail to teach the rower how to use the body and muscles in a coordinated way that will transfer to rowing, but the high volume inherent in light endurance circuits can cause overuse injuries and muscular imbalances. Additionally, a rowing team can have heights ranging from 5'3 females to 6'8 males, and a generic commercial exercise machine is not built for this range of athletes. This exposes athletes to further risk of injury with ill-fitting and ineffective machines that place tension on vulnerable parts of joints, muscles, and bones.

In addition to the physiological benefits of low-rep training compared to high-rep training (20+ reps), low-rep training allows an athlete to focus fully on executing every rep with proper form and power. Mental focus deteriorates in high-rep sets, which leads to ineffective low-effort training as well

as potential for injury resulting from a breakdown in form. Performing powerful and accurate 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 rower what their typical week is like, and it'll be at least 12 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 road/stair run conditioning 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 also causes postural concerns for the mid-back and shoulders. All of this training is then combined with student or full-time employee responsibilities of sitting down and studying, working, and commuting. 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 [2].



Rather than flail away on machine circuits and high-rep endurance sets, this system of strength training uses faster, more efficient, safer, strength-focused sessions to target exercises to directly improve rowing performance as well as exercises to prevent injury. These sessions consist of back and front squats for the legs, deadlift variations for the posterior chain muscles, overhead pressing for the shoulders and mid-back, barbell and dumbbell rowing variations for the back muscles, and assistance exercises for injury prevention and muscular balance.

Main work consists of strength or power work, using big compound muscle groups, to improve endurance over the long-term via the top-down strategy. Assistance work can then be used for secondary goals such as muscle size, strength, and injury prevention through isolation exercises for targeted muscle groups. Assistance work tends to focus on restoring the muscles that rowing fails to develop. There is much more detail on this in the Exercise Selection and Injury Prevention chapter, but lack of strength in the postural muscles is one of the main causes of the rowing hunchback—internally rotated “caveman” shoulders and the turtleshell mid-back. Sweep rowing causes even greater imbalances by putting greater reliance on one side of the body. The muscles of the inside arm and the inside leg are commonly under-developed compared to the outside arm and leg. It is imperative that these imbalances are corrected to restore bilateral (left/right side) symmetry and avoid overuse injuries and complications later in life. One of the main benefits of a structured weight-training program is restoring balance to the muscular system by correcting bilateral asymmetries to prevent injury and maximize performance.



The single most important reason to weight train is prevention of injury. Immediate performance improvement is a distant second. This is contrary to the beliefs of most, but 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 can out-run 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? Weight-training can prevent muscular imbalances that lead to injury, which keeps athletes in the boat longer, providing more time to practice form and gain opportunities to improve in the sport, which can earn a longer, healthier, and more successful career.

**\*Please note that all of the following information about programming 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, I recommend at least a few introductory sessions with a qualified personal trainer to learn the basics of the exercises in this program. Performing free-weight exercises 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. Do not sacrifice form for weight at any point in your training.**

**None of the following is medical advice and it is recommended that you consult a medical professional before undergoing any physical training regimen.**