

KISS

The KISS (KeeP It Simple Swimmer) method for swimming by Bob MacDonald

The following information was put together for those masters/triathletes, or swimming enthusiasts who wish to improve their training effort. Contributions have been made by American Swim Coaches Association (ASCA), United States Swimming (USA Swimming) and my personal experiences from mentor coaches. All information should be used as a guide; it is not the end all. **It has been modified from recommended specifications for the college-age athlete.**

This was done based on my personal experiences, time limitations, pool, personal and other variables for the adult swimmer. The chart is designed to be flexible. Energy systems do overlap. Design your workouts with this in mind. Try to find a correlation between your subjective intensity, expected heart rate and physical effort.

Active rest/recovery can be incorporated into categories 2, 3, 4, and 5 after hard sets to aid in the removal of lactic acid. Swim something easy after something hard. This can also be put into categories 4 and 5 sprint sets, for example, 6 x 100' on 6 minutes, go a short easy swim between each 100. A 50 Drill swim easy by 25.

It is better to train up and swim down events. Train for the mile and swim down to the 50. Train for the 50, you'll swim the 50.

- Remember, practice does not make perfect. *Perfect* practice makes perfect.

PRINCIPLES OF TRAINING

1. INDIVIDUAL RESPONSE PRINCIPLE

Swimmers will respond differently to the same training, given by the same coach, in the same pool. This different response is due to the following factors:

- a. **Heredity** – The gifted athlete may be blessed with positive inherited physical traits, such as an abundance of a specific type of muscle fiber.
- b. **Maturity** – Different age swimmers will respond differently to the same training, and not every swimmer of the same age is at the same physical maturity level.
- c. **Nutrition** – Good nutrition is a vital prerequisite to effective training, and cannot be assumed in any athlete, no matter how affluent the society from which the athlete comes.
- d. **Rest and Sleep** – Though athletes differ in their needs in both these areas, it is critical to the training process for adequate amounts of both to be in place in order to consolidate the gains of training.
- e. **Motivation** – Increased levels of individual motivation will result in stronger efforts in training, and a more consistent, helpful life outside the training.

2. ADAPTATION PRINCIPLE

Physiological changes take place as training adaptations occur. These include:

- Improved cardiovascular system function
- Improved muscular endurance and strength
- Stronger bones, tendons, ligaments and connective tissue

3. OVERLOAD PRINCIPLE

If improvement is to occur, the training program should include a gradual increase in the workload in all areas. Five training concepts are important to this principle:

- Intensity – how hard the effort is done
- Repetitions – how many repeats are done
- Volume – how much total work is done
- Duration – the length of time of the work segments
- Rest – how much time between work bouts (Both intervals and workouts).

4. PROGRESSION PRINCIPLE

If improvement is to occur, the overload must be increased progressively. If the training load is increased too quickly, the swimmer may risk both injury and peaking too early. Training adaptations may not occur with too rapid an increase in load. The total training volume should not increase more than 15% to 20% each week. This also suggests that training should go from the general to the specific.

5. SPECIFICITY PRINCIPLE

Swim training should be specific. This means that distance swimmer should be training to develop endurance and sprinters should be training to develop speed. Both dry-land and water training regimens should reflect those requirements. It is necessary to recognize, however, that the distance swimmer has a need for some explosive capability, and the sprinter, a strong need for an endurance base. Train for distance and you may swim “down” events, for example, train for the mile and you can swim the 50; train for the 50 and that mile is going to hurt.

6. VARIATION PRINCIPLE

Training adaptations occur most regularly when the training is varied or cycle, alternating a period of hard effort with a period of relative recovery. Quality work must be compensated with quality rest. This principle is true from the microcosm of the single set to the macrocosm of the year or the multi-year training plan.

7. WARM-UP AND COOL-DOWN PRINCIPLE

Each workout effort should be preceded by a warm-up and concluded with a cool-down. The following effects are created by warm-up and cool-down.

Warm-up:

- Increases body temperature
- Increases respiration rate and heart rate
- Increases flexibility and reduced chance of muscular injury

Cool-Down:

- Speeds removal of metabolic wastes
- Helps prevent cramps, tightness and soreness

8. REVERSIBILITY PRINCIPLE

Training effects are reversible. When workouts are stopped, or are not frequent enough, loss of training may occur. Detraining of specific systems must be prevented by frequent exercise of those systems. This leads to one of the great issues in training which is how much “maintenance” work is needed for each individual for each system, while “development” of another system is being emphasized.

9. LONG-TERM TRAINING PRINCIPLE

Long-term training with a multi-year approach allows for:

- Gradual improvement
- Growth and development of all systems
- Improvement in stroke technique
- Development of race strategy and conceptual race thinking
- An improved understanding of the spirit and ideas behind a sport like swimming

10. ADAPTATION AND STRESS

Hans Selye, author of *The Stress of Life* in 1956, noted that each person has a general adaptation syndrome that responds to the stressing agents, in ways that are both specific to the stressors and also have stereotypical nonspecific effects.

Both swimming specific and life stressors require adaptation by the body. The coach must take all stressors into consideration when planning training. Additional outside stressors may include:

- The illness or death of a loved one
- Difficult weather or climatic conditions
- Lack of adequate rest or sleep
- Emotionally challenging or draining situation, and many others.

The same types of training that are good for Senior swimmers are good for Masters athletes. Possibly, more endurance work may be valuable with Masters athletes. As they have potentially lost some muscle tissue, a greater reliance on aerobic sources of energy may be necessary. Training up to two hours per day will give maximal results. Less is fine for health-oriented goals, and lower-performance goals.

As Masters move into the older age groups, lower daily mileage will be a reality, as they will swim more slowly in practice. Consequently, they will achieve similar training effects, with less mileage. The nonexistence of research on the older Master swimming population makes this area a great unknown. Daily, people exceed the reasonable expectations of coaches!

All forms of resistance training, spring assisted and sprint resisted, stroke drills and related methods are all appropriate for Masters swimmers. The concept of training around the aerobic/anaerobic threshold is equally valuable at this age, but remember that most Masters will likely need increased recover times between training bouts that emphasize training categories 3, 4, and 5 should use active recovery.

If monitoring training with heart rates, remember that maximum values will decrease with age, and thus the ability to produce higher values in training will decrease as well. After age 60, the range of peak heart rates is remarkable, all the way from 200 beats per minute to 150 beats per minute.

Dry-land resistance training may be more important for Masters than for Age Group or Senior swimmers. Masters need to counteract the effect of loss of muscle tissue, and a decrease in fast twitch fibers. Regular resistance training will do this. Also, research tells us that females doing regular resistance work will combat the effects of Osteoporosis after menopause.

Masters swimmers can, and regularly do, amazing things in the water. The benefits of Masters swimming extend far beyond the physical, into the psychological, with excitement and enthusiasm for the sport of swimming, and for life itself. While we know comparatively little about training the Masters athlete, we daily can expand our thoughts on what is possible late in life. What better rationale for continuing to train could there be?

<i>TRAINING CATEGORIES</i>							
Category/ Energy System	Purpose	Subjective Intensity	Expected Heart Rate	Rest	Duration	Repeat Distance	Physical Effort
1	Removal of Lactic acid	Very light to fairly light	HR is where you are on recovery pace	10 – 30 seconds	15 – 30 minutes	Any	Easy recovery
2	Maintain aerobic adaptations	fairly light to somewhat hard	60-70% of HR max	10-30 seconds	30-60 minutes	400s – 500s	75% to 85%
3	Improve aerobic power	Somewhat hard to hard	85% of HR max	30 sec to 2 minutes	8 – 30 minutes	100s – 200s	85% to low to mid 90%
4	Improve ability to produce lactate, improve lactate tolerance	Very hard	100% of HR max	1:1 – 1:4 active	16 – 24 minutes	100s	100% effort
5	Race pace practice, improve speed sprint	Extremely hard	100% of HR max	1:4 – 1:8 active, rest if possible	16 – 20 minutes	12.5 – 50 yards	100% effort