

Building the Perfect Swimmer

OR
DO IT YOURSELF - GENETIC ENGINEERING
FOR SWIMMERS AND COACHES

By Wayne Goldsmith

With all the talk about cloning, stem cells, genetic engineering, genetically modified food and computer generated medical technology, the question arises.....can you build the perfect swimmer?

Let's pretend we could get into a scientific laboratory and build the perfect swimmer. Just think of the possibilities.

Brain: Big and very, very smart. Swimmers are the smartest people in the world anyway. Who else can count laps, count strokes, take their own time, take their own heart rate and still do their school homework in their heads while singing their favourite song underwater all at the same time?

Head: Hairless. Think of all the money our super swimmer could save on swim caps. Let's make the head long and cone shaped for better streamlining and make the ears smaller to cut down on resistance.

Skin: Smooth and hairless. Think of the money our super swimmer could save on razor blades. Maybe we cover the swimmer in a type of shark skin material like that found in some of the body suits or maybe even scales. If they work for fish, maybe they would work for humans!

Eyes: Made with a clear lens over them to avoid the need to wear goggles. No need for eyebrows or eyelashes – lets keep them off to improve streamlining.

Shoulders: Wide, strong and straight. Powerful and stable yet flexible.

Arms: Long. Very long. So long that the super swimmer drags their knuckles on the ground as they walk. And very strong. arms capable of reaching out long and pulling with great power every stroke.

Hands: Big - let's talk dinner plate size. Big and strong and wide, but very sensitive so that our genetically modified giant can feel the water better than us "standard models". What about making the fingers webbed so they can act like big paddles when they pull.

Chest: Strong but shallow. Powerful pecs for perfect performance but not too deep. We want strength but not big muscles that will just slow our perfect swimming machine down.

Heart: Big and strong. One capable of pushing a lot of blood around the body with every pump.
Blood: Capable of carrying lots and lots of oxygen to muscles and really good at disposing of lactic acid when swimming fast.

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Muscles: Strong and capable of working very fast but also capable of sustaining speed over long distances.

Abdomen: Ripped and six pack all the way. Strong, powerful abs that act as the stable platform for this swimming machine to take advantage of the power that can be generated his or her long arms and legs.

Legs: Long and strong. Flexible and bendable. Legs capable of producing great power and drive, yet maintaining flexible, flowing and supple movements.

Feet: Size 15's – no let's make them 20's. Big strong feet that are really flexible and act like a pair of flippers. How about we design the toes to spread out like a duck's feet when the kick to really produce some speed.

So there you have it – the perfect swimmer – a human swimming machine capable of breaking world records, leaping tall buildings and winning gold medals in a single bound.

The question is, can a “normal” swimmer become a “super” swimmer without having to have their genes changed and rearranged?

Training is all about “re-creating” yourself. Training changes your mind and body to such a degree that it has the same effect of modifying yourself as if you were part of the laboratory experiment of some mad scientist. Training helps you rebuild, remake, recreate and regenerate yourself into a swimming machine capable of anything.

How?

Brain: Training teaches your brain many things. You learn skills like rhythm, balance, coordination. You learn to do skills and drills and great technique. Your brain is like a PC – it has the capacity to do some amazing things but needs some programs to make it run. Your training is like the programs you put onto the computer to allow you to write, draw, record information and so on. Just like a computer, if you put the wrong information in – you get the wrong results out. Doing drills, skills and technique training correctly is like putting in the right information into your computer (brain). Put the information in correctly – you get amazing results!

Head: Wearing a tight fitting yet comfortable cap has the effect of smoothing out the lines and contours of your skull. You can make your head “longer” and more cone shaped, by streamlining out of every turn and off every dive. When you think about it, the long, stretched out arm position of streamlining looks a bit like a “cone head” in the shape your hands and arms form.

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Skin: You don't need scales. Your skin is designed to keep water outside and keep you inside. If you want to get all smooth, try SHAVE DOWNS. (Obviously this is only when you have enough body hair to warrant shaving down). Five tips to shave downs:

- Make sure the shavers are clean and sterile.
- Treat any cuts and nicks immediately with anti septic cream or powder.
- Use plenty of clean warm water and shaving cream / shave lotion.
- Practice shaving down a few weeks before the meet to check how your body reacts to being shaved. Some swimmers get rashes from shave downs.
- Use an after shave cream or balm to smooth shaved areas but try not to get any of it on your own hands.

Best time to shave down is the night before the meet or between heats and finals PROVIDING it doesn't interfere with your pre race routine and recovery program.

Eyes: While swimming training can't give you x-ray vision or super sight, swimming training does improve your ability to FOCUS. This is not really a vision thing – it is the way you learn to block out noises, crowds, other swimmers and distractions when you are trying to give it your best.

Shoulders: Recent developments in freestyle and backstroke technique have seen swimmers and coaches try to turn swimming these two strokes into a "side to side" type action. This means the swimmer's body rotates around a central axis like if it was on a skewer or string run down the centre of their body.

To achieve this technique – the Popov style or "KAYAK" technique, you need to make your shoulders very strong and stable so that they stay that way as your body rotates and moves through the water.

A great exercise to develop KAYAK PADDLE shoulders is the SHOULDER BLADE SQUEEZE. Relax your arms, shoulders and neck.

Try to squeeze the lower part of your shoulder blades together. It helps to imagine someone's finger in the middle of your back then try to squeeze it with your shoulder blades. Hold the squeeze for 10 seconds, then relax for 20 seconds. Do it again, this time hold for 20 seconds then relaxed for 30 seconds. The third time hold the squeeze for 30 seconds then relax. Keep your arms relaxed and keep breathing slow and easily all the time. This is a great exercise because you can do it anywhere, anytime.

Arms: While training won't make your arms longer, you can develop LONGER STROKES by working on your flexibility and "feel" of the water. Think REACH LONG – PULL STRONG. Having longer arms doesn't always mean longer strokes – it is what you do with your arms that matters. For example:

A swimmer with an arm one metre long can apply pressure to the water for one metre for each stroke IF the swimmer has the ability to feel the water and pull on the water for the full metre. If the swimmer doesn't feel the water and hasn't learned to pull the water throughout their stroke, their long arms are no advantage.

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A swimmer with shorter arms, but with superior feel and stroke technique can actually have longer strokes than the person with long arms! Think of this next time you are on the blocks next to some giant swimmer. **TECHNIQUE BEATS TALL!!**

Hands: Wouldn't you like to have huge paddles instead of hands? Think of how fast you could move through the water!!!!

Great swimmers actually do have big paddles – how? Coaches believe that great swimmers learn to pull the water not only with their hands but also with their **WRISTS AND FOREARMS**. This has the same effect of making their hands “bigger” and like paddles.

You can develop this bigger paddle by doing fist clenched drill swimming.

Push off the wall with your fist tightly clenched. This removes most of your ability to feel the water with your hands and teaches your wrist and forearms to feel. Keep your fist clenched for 10 strokes, and then slowly open your hand, a little at a time, a fraction each stroke over the next 10 strokes, until fully opened. What did you notice?

Swim easily to the end of the pool and repeat the fist drill.

Chest: You can get a lot stronger chest muscles without getting bigger (beach) muscles. The key to body shape and fast swimming is to get stronger without necessarily getting much bigger. This is possible by doing body weight exercises like dips, push ups and body presses.

Heart: The best way to make your heart a **SUPER HEART** is to do regular endurance training like long slow swims, do sets of 400's and 800's and to train long distances with rhythm and relaxation in practices. The fitter you get, the stronger your heart gets and the more blood it can pump with each beat.

Blood: Endurance type training also changes your blood. Your lungs breathe in air from the environment. Your blood then “traps” the air on special molecules and transports the oxygen to your hard working muscles. The fitter you are, the better your blood is at carrying the oxygen (air) to your muscles and the more oxygen you can get to your muscles, the better you swim! That's why we call endurance training **AEROBIC** (pronounced **AIR-ROBIC**) because it helps your body use the oxygen in the **AIR** more efficiently.

Muscles: We know that muscles get stronger when they train but did you know they get **SMARTER**. There is a thing called **MUSCLE MEMORY** – which scientists believe explains how muscles (and nerves) actually learn how to do things better. We also know that the best way to make muscles smarter is to teach them how to do things the right way so they learn the three **E.E.E's** of movement. – Effective – Efficient – Economical.

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Abdomen: You can develop super abs by doing DAILY abdominal exercises. You use your abs everyday, so you can exercise them everyday.

Try the **AB POINTS PROGRAM**.

Pick four basic AB exercises. Situps, crunchies, side sit ups and leg raises are a good combination. One ab exercise (eg one sit up) is worth 1 POINT.

DAY ONE – Target score = 50 points. To achieve this score you must do a combination of ab exercises to a total of 50 points (ie 50 ab exercises). You can't do more than 30 of any one exercise. Over the next few weeks, aim to achieve higher target score.

DAY TWO – Target score = 55 points

DAY THREE – Target score = 60 points.

Keep going until you achieve 100 points in a day and see how your abs look and feel then!

Legs: Strong, powerful legs are at the core of fast swimming. Kick sets, running, bike riding and walking can all help build leg strength and kicking power. A good tip in training for SUPER LEGS is to always kick harder and faster in the last lap of all training efforts – drills, distance sets, short sprints, kick sets – everything. By always kicking home fast, your brain and your legs learn that this is the right way to swim well and when it comes to the last lap in your next race they will help you kick your way to success.

Feet: All swimmers would like to have fins instead of feet. Just imagine being able to move effortlessly through the water like a fish or dolphin.

Until we learn to do "fin transplants" you can do the next best thing. We know that great kickers have fantastic ankle flexibility. We also know that if you do flexibility work everyday, your flexibility can improve.

So if you want "FIN FEET" work on your stretching everyday – before and after training ESPECIALLY on the exercises to stretch you ankles, feet and calf muscles.

Training may not make you taller, web your toes or re-shape your skull bones, but it can change you into an efficient, effective and energetic swimming machine.

All you need is the secret formula. Here, exclusively for YOU is the secret formula for turning yourself into a swimming machine:

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Ingredients:

- Great technique
- Excellent skills
- A positive attitude – especially in the tough times
- A sensible balanced diet
- A balanced approach to life with school, family, friends and swimming in the right mix
- The determination to train hard and give it your best
- The desire to be the best you can be
- The confidence to believe that anything is possible

Recipe:

- Add all the ingredients and mix together well.
- Apply to your body and mind daily until you achieve your goals

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