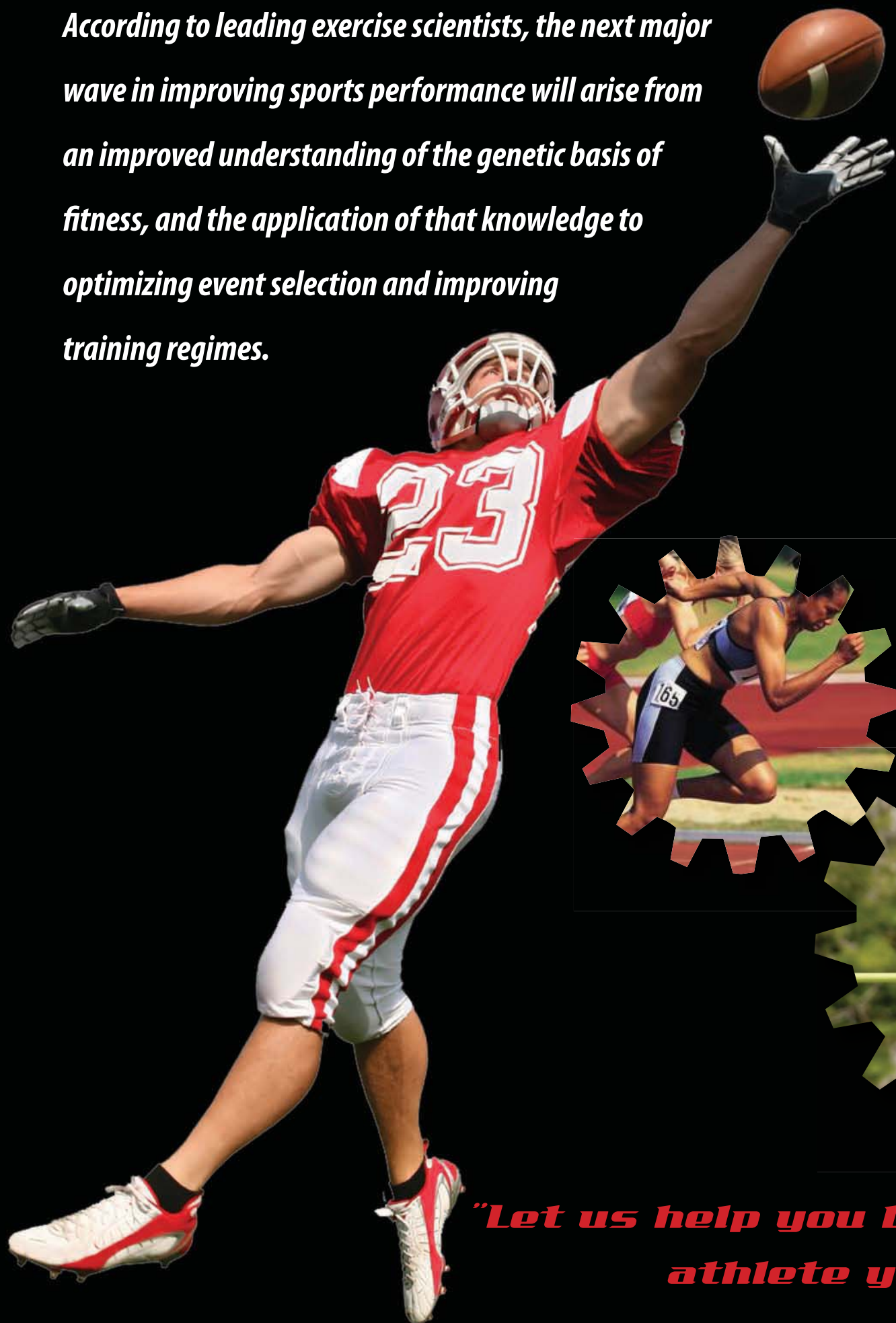




**Genetic Testing for Personal Trainers**

**GIST**<sup>™</sup>  
Sports Profile

**According to leading exercise scientists, the next major wave in improving sports performance will arise from an improved understanding of the genetic basis of fitness, and the application of that knowledge to optimizing event selection and improving training regimes.**



### **What is the ACTN3?**

- Everyone has two copies of the ACTN3 gene, inheriting one copy of the gene from each parent.
- The ACTN3 gene instructs our body to produce a specific muscle protein called *alpha-actinin-3*.
- Researchers have found that some people have the variant which prevents the ACTN3 from making this specific muscle protein. Having this variant does not seem to have any harmful health effects, but there does seem to be an effect on sports performance.
- Scientific studies involving elite level athletes suggest that the presence of this specific muscle protein contributes to the muscle's ability to generate forceful contractions at high velocity.

### **Can you measure the natural pre-disposition of an athlete for a particular sport?**

- Researchers have found that individuals having the variant in both copies of their ACTN3 gene may have a natural pre-disposition for endurance (aerobic energy system events) such as distance running, distance swimming or cross country skiing.
- Those athletes having one copy of the variant in their ACTN3 gene may be equally suited for both endurance and sprint/power sports such as soccer or cycling.
- Athletes that possess neither copy of the variant in their ACTN3 gene may have a natural predisposition for speed/power sports such as football, weightlifting and sprint events.

### **Is sport genetic testing difficult or expensive?**

Tremendous advances have occurred in the last several years making genetic testing simple and affordable. There are (5) simple steps to obtaining your ATLAS Sports Genetics test results:

1. Obtain a test kit by ordering one on-line at [www.atlasgene.com](http://www.atlasgene.com).
2. Complete the application form.
3. Remove the swabs from the Test Kit. Without touching the cotton pad, rub the swab gently but firmly around the inside of the cheek and gums for around 20 seconds, then allow to air dry for at least one minute.
4. Place the swab (head first) back into the return packet and seal. Avoid touching the cotton pad with your fingers during the sealing process.
5. Place the swab and application form into the return envelope and mail. Private results will be available on-line in about 2-3 weeks through a security password that you will receive.

### **What are the benefits for a Personal Trainer to use genetic testing as a part of a fitness assessment?**

- ACTN3 Sport Gene test is a perfect compliment to any fitness assessment evaluation.
- Genetic test results can be used to assist clients to select energy systems and training techniques best suited for their pre-disposed genetic profile (i.e. speed/power vs. endurance).
- Personal Trainers can take advantage of our Dealership Packages, which allows repricing of test kits, thus creating an additional profit center.

#### *References:*

Yang, N. MacArthur, D.G., et.al. *ACTN3 Genotype is Associated with Human Elite Performance.* American Journal of Human Genetics 73: 627-631 (2003)

MacArthur, D.G., North, K.N. *A gene for speed? The evolution and function of alpha-actinin-3* BioEssays 26: 786-795, (2004)

***"Let us help you become the best athlete you were born to be!"***





[WWW.ATLASGENE.COM](http://WWW.ATLASGENE.COM)

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