

DATA ON ELITE SPRINTERS

For our elite athletes the following data already exist, we only have to pay for access to them, which is far less than if we had to measure them ourselves

1—reaction time—time from the shot is fired to the foot hitting the block—measured automatically nor could we measure it

this is positively associated with best times but is not a strong predictor, e.g. Shelly Ann has relatively mediocre reaction times but is the best—not expected to be correlated with knee symmetry

2—speed to achieve first 20 yards—this is expected to be a key variable because it measures time to reach erect posture quickly

we expect this to be STRONGLY associated with knee symmetry

3—physical strength as measured by tossing a large ball over your back as far as you can—this variable chosen because there any 6 year old can do it but there is no bias by prior training and practice, hence it should be a good measure of strength running the length of the entire body

4—this spring we hope to measure:

- a) leg thrust per leg (FA) and together
- b) degree of lumbar curvature via a “lumbar mouse”
- c) and to increase sample size by N~20 new recruits

5—we are going international: a recent Austrian sample of children for 60m races showed a significant correlation between knee FA and sprinting time—we are now doing similar work on UK and German children

6—knees continue to be THE MOST symmetrical part of the external morphology when multiple traits—hands, feet, ankles, elbows—are measured]

FUNDING

Biosocial Research Foundation

Enhanced Education Foundation

German NSF (application pending)

NEW WORK

With the above work completed, it is hard to visualize any more work along the same lines (external morphology, speed)

Instead, we wish to turn to genetics, in particular West African genetics relevant to sprinting, muscle fibers, energy, strength, morphology, including springing, and body shape. We hope to isolate $N \sim 40$ genes with which to create a chip we can use to easily study both elite sprinters, average ones, non-sprinters etc. should we find results of interest, we can easily expand to testing elite sprinters of West African origin with the same chip or devise an enlarged chip to encompass other geographical areas, Europe and Asia.