

# Injury in the genes?

Some players might be more predisposed to damage

WHEN Jaco Taute hit the Christchurch turf with the ball tucked under his arm, and had two Crusaders fall awkwardly on top of him, you knew immediately that it was bad.

Initial impressions were confirmed, and the luckless full-back, having just returned from 10 months off with an anterior cruciate ligament injury, now faces another lengthy lay-off.

A similar injury “curse” might be said to exist for Juan Smith, who fought a brave but futile battle against injury, and for Pierre Spies, who suffered his second biceps tear in a year. Clearly, injury is part of rugby and, as I wrote a few weeks ago, teams can expect to lose at least two players per match to injury.

But are some players more susceptible to injury than others? If so, can we identify and pre-emptively manage them before injury-enforced lay-offs?

I’m not talking here about players who perform different roles on the field. I’m sure we share a theory that forwards, who engage in tight contact situations will have a greater injury risk than say, a scrumhalf or halfback, whose job description keeps them out of many higher risk plays.

I’m sure we would also agree that the playing personality of some players increases their injury risk. Are you surprised, for instance, when Schalk Burger, who plays the game with Red Bull-like intensity, is bruised and battered at the final whistle? These are tactical and style predispositions, but what I’m talking about is a genetic predisposition to injury that some players might have.

Scientists search for links between various conditions and genes because it offers new treatment possibilities. For example, if gene variants that predispose people to cancer can be identified then gene therapy might reduce the risk.

Sometimes, corrective action can be taken before a disease develops. Remember Angelina Jolie’s double mastectomy? Her decision was made, with the input of medical experts, because of identified gene variants that increased her risk of breast cancer.

Moving away from disease and back to rugby injury, the same concepts apply. Some pioneering work has been done here in South Africa by my colleague Professor Malcolm Collins, who has identified numerous genes that control the development connective tissue,

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“ No need to rush genetic screening; it’s an ethical minefield

including tendons, in the body. He has found that some people possess variants of these genes that undermine the “structural integrity” of their tendons, which might make them more likely to get injured despite the same loads or stresses.

The analogy is two buildings struck by an earthquake — one stands while the other crumbles, and the difference is structural integrity. In the same way, the gene variants we have for our tendons may increase our susceptibility to injury.

An important word of caution, however. Before charging off to genetically screen players like Arsenal Football Club did, there are some major problems with this in sport.

First, injuries are complex, the result of dozens of contributing factors.

For example, Taute’s injuries were freakish incidents, down to fate, and not genes at all. Genes don’t function in isolation, so over-reliance on screening is a short cut to brash, unnecessary decisions.

Second, genetic screening invites an ethical dilemma because there is no guaranteed corrective action in the case of injury. Those who offer solutions based on genes are hugely over-selling our influence.

This creates a classic upside vs downside scenario — a gene variant may increase injury risk by say 10%, but if this can’t be reduced then is a player offered a contract, or is he viewed as less valuable? If so, he could refuse testing, as is his right.

It’s an ethical minefield, and the sports world isn’t quite ready to make the most of this scientific progress. A burgeoning number of people selling genetic screening may argue otherwise, but the reality is that for now, it’s a world of exploration, not certainty, so stick to the tried and tested.

## SPORT ON YOUR TV

### TODAY

**Cycling:** Paris-Nice, stage 1, Saint-Georges-Sur-Baulche, at 3.40pm on SS5  
**Rugby:** Varsity Cup, Pukke vs Wits at

4.30pm, UJ vs Maties at 6.45pm, both on SS1  
**Soccer:** La Liga, Real Sociedad vs Raya Vallecana at 11pm on SS3  
**Tennis:** ATP Indian Wells at 8pm on SS6