Is there a relationship between the haematocrit levels and the red blood cell count for athletes at the Australian Institute of Sport?

* Scatter graph without trend line…

From the scatter graph we can see that as the Haematocrit levels increase the athletes’ Red Blood Count also increases.

* Scatter graph with trend line…

This relationship appears to be linear with a 0.1 increase in Red Blood Count for every increase in 1 Haematocrit level.

There appears to be a possible outlier for the athlete with a Haematocrit level of 60. This athlete also has a high red blood cell count of over 6.5. This outlier is along the same trend line as the rest of the data and so may increase the strength of the relationship.

This model appears to be a good fit of the data throughout the range of Haematocrit levels with all points aligning with a linear trend. However there are no athletes with Haematocrit levels from 53 to 59 and so we are unable to describe the fit for this data range. This means the model may not be as appropriate for assessing the relationship between these variables when the Haematocrit levels are over 52.

This relationship appears to be moderate-to-strong as there is some scatter along the trend line but it is not a large amount.

In this context it seems likely that there would be a relationship between these two variables as the Haematocrit level measures the percentage of red blood cells and the red blood cell gives a count of these cells. One important aspect of this data is that all of the data points are for athletes and so any relationships may not be applicable to non-athletes. Another factor that may influence the relationship between Haematocrit levels and Red Blood count is the gender of the athlete.