Not all skeletal muscle fibres are the same; in fact there are three different type, each of which has particular characteristics that affect sports performance. Initially scientists identified through observation of colour that there were 2 types of fibres, which they called type 1 and type 2. However, later research then showed that the type 2 fibres could be further divided into two types, which have become known as type 2A and type 2B.

Type 1 fibres (slow twitch)
Type 1 fibres are also referred to as slow twitch fibres as they are best suited to producing lower levels of speed and power. However, they can maintain this for prolonged periods of time withstanding the onset of fatigue.

Type 2b fibres (fast twitch)
These are the opposite to type 1 fibres; they can contract quickly and forcefully but have a poor endurance capacity.

Type 2a fibres (fast twitch)
These fibres are situated somewhere between type 1 and type 2b fibres. They have a more even mix of both power and endurance capacities.

The table below illustrates the differences between the 3 types of muscle fibre.

	Slow twitch (1)	Fast twitch (2a)	Fast twitch (2b)
Speed of contraction	slow	fast	fast
Fatigue rate	low	medium	high
Force of contraction	low	high	high
Size	small	large	large
Myoglobin content	high	medium	low
Aerobic capacity	high	medium	low
Anaerobic capacity	low	medium	high
Capillary density	high	high	low
Colour	red	white	white
Typical sports	marathon runner	games player	sprinter

Muscles tend to be composed of both types of fibres, although the amounts may vary from muscle to muscle and from person to person. Top endurance athletes have a greater proportion of slow twitch fibres whereas sprinters and power athletes have more fast twitch fibres. Team sports players often have more type 2a fibres as they require both power and endurance capabilities.

Fibre types are genetically determined at birth and cannot be changed. However, recent research has shown that training can lead to small changes in the fibres types characteristics.