There are six Grand Sumo tournaments a year, three are held in Tokyo and one each in Osaka, Nagoya and Kyushu. A tournament lasts for 15 days, each wrestler fights once each day against a different opponent.

The rules of sumo are very simple. A bout is won by forcing an opponent out of the inner circle or throwing him down in the dohyo (the sumo ring). Other less common ways a loss is awarded include injury, no show, a loose Mawashi (belt) and Kinjite (an illegal move). Of course, there are no weight categories as in boxing or western wrestling.

Professional sumo is divided into 6 ranked divisions. Wrestlers are also ranked within each division. There are at present about 800 rikishi (wrestlers) in professional sumo from trainees to the Yokozuna (Grand Champion). After each tournament the rankings are revised, each wrestler being either promoted or demoted depending on their performance throughout the 15 days. Makuuchi (幕内), or makuonouchi (幕之内), is the top division and has 42 wrestlers, the titleholders or champions and are ranked among five categories: Yokozuna – or Grand Champion – the highest ranked wrestler in sumo followed by Ozeki, Sekiwake, Komusubi and Maegashira.

In the past 10 years, sumo has experienced some globalisation, there are a lot of wrestlers from countries outside Japan, for example Mongolia, the USA, Brazil, Russia etc. In 2014, there were four Yokozuna, all of them from Mongolia.

In 2014, 4000 people over the age of 20 participated in a survey that asked about favourite sports in Japan. The results showed the following:

1. Baseball
2. Football
3. Sumo
4. Golf

Although Sumo is a traditional sport, it is not the most popular sport in Japan. Japanese enjoy watching sumo, however do not have much opportunity to participate in it.

INJURIES IN SUMO

Tsuihaya reported on 4849 injured wrestlers from 1982 to 2007. They were categorised by the type of injury; trunk, upper extremity and lower extremity. The
most frequent type of injury was lower extremity 2502 (51.2%), followed by trunk 1274 (26.3%), upper extremity 1017 (21.3%) and others at 56 (1.1%). The trunk included neck and head injury which together totalled 348 (7.2%)

During the 16 years studied, seven Jefferson fractures were reported, mean age 19.9 years old, mean body weight 123.9 kg. None of these wrestlers had neurological symptoms and were treated with conservative therapy. All cases resulted in nonunion and all wrestlers returned to competition. The suggested reason for the cause of nonunion is that injured wrestlers were not allowed ample rest compared with union cases. The authors of this paper suggest that the sumo ranking system is too strict – once a wrestler stops competing and is absent from a tournament due to injury, his rank steadily decreases. For this reason, wrestlers often continue to compete, regardless of symptoms. The focus of Tsuchiya’s research was Jefferson fractures. They collected ‘Baseline’ data including annual measurements of neck muscle strength at the beginning of each season. They compared the data with American football players and Rugby players, two sports which also require neck muscle strength and pose a risk of Jefferson fracture. Neck muscle strength was significantly lower among the sumo wrestlers.

TRADITIONAL TRAINING METHODS: To prevent neck injury.
Wrestlers often butt their heads against each other at the start of a match, which is often the cause of burner syndrome and Jefferson fracture. Recommended training is to hit the head with a hand for low impact and muscle strengthening for neck.

Suriashi
One of the traditional exercises is known as Suriashi. It’s a leg strengthening exercise done in a crouched position. A wrestler bends his elbows with his hands extended in front and steps forward with alternating legs, keeping low to the ground.

Matawari
One of the traditional stretching techniques is known as Matawari. A sumo wrestler sits with his legs splayed apart as far as possible. While keeping his knees locked, the wrestler must then lean forward until his chest touches the ground. Shimizu et al. studied lower extremity injuries in sumo between 1993 and 2009 and recorded that hamstrings were the most frequent site of strain followed by quadriceps and adductor muscles. It was suggested that adductor muscle strains were often caused by Matawari, which can place large stress on these muscles, particularly among new apprentices. However, this exercise is a very useful as stretch when training the adductor and hamstrings muscles.

Shiko
Sumo wrestlers perform a stomping technique called Shiko to build lower body strength. The exercise begins with the wrestler standing with his feet wide apart and his hands on his knees or thighs. While keeping one foot anchored, he will then lift his other leg high in the air, driving it down into the mat with tremendous force. The wrestler will then execute the same exaggerated stomp with the other foot.

PREVENTION Change the regulations
Nakagawa et al. presented a case report of a high-level collegiate sumo wrestler who suffered anterior dislocation of C7 on Th1 cervical spinal cord injury. The mechanism of injury was by being pushed toward the edge of the dohyo while the back of the wrestler’s head is placed on the abdomen of his opponent, resulting in hyperflexion of his cervical spine (Figure 4). The authors reported that the same mechanism is often seen in rugby and American football. As some reports show that changes in the rules decrease cervical spine injuries,
the refereeing regulations of the Japan Sumo Association prohibit techniques that are considered risky. With the aim of preventing injuries, these regulations are applied to wrestlers of all levels, from sumo championships through to grassroots. Techniques thought to be risky include strong gripping of the neck of an opponent below his axilla, fixing the back of one’s head onto the abdomen of an opponent and fixing both partner’s necks under their opponent’s axilla. To decrease spinal injuries in sumo, these refereeing regulations should be strictly obeyed and all sumo wrestlers should be taught proper techniques.

Medical Screening
Kinoshita et al. showed the efficacy of electrocardiography (ECG) in the diagnosis of left ventricular-hypertrophy (LV) using 890 newly recruited Japanese professional sumo males, from 1992 to 1997. They were tested by comparing simple ECG criteria with echocardiographic evaluations of LV. LV hypertrophy could not be classified as a cardiomyopathy, but was quite probably the aetiology for sudden death among youngsters. Unfortunately, before medical supervision of the recruits began, there were several instances of sudden cardiac death among professional sumo wrestlers. The authors concluded LV hypertrophy is more prevalent among newly recruited professional sumo wrestlers than among the general population, but ECG has a very limited capacity to detect LV hypertrophy in these very large individuals. LV hypertrophy and its prognostic significance is likely to be overlooked in large, muscular athletes if ECG is solely relied upon for detection. Nevertheless medical checks using ECG and ultrasound continue for new recruits.

CONCLUSION
Sumo is a traditional sport with a long history. The type of injuries suffered are similar to other high-contact sports, including Jefferson fracture, a characteristic injury in sumo. For injury prevention, some traditional exercises are used but sufficient evidence is lacking as to whether they in fact help to prevent injuries or not. Some doctors have tried to change certain regulations and initiate more stringent medical screenings. If in the future, traditional sumo training techniques prove successful in the prevention of injuries, sumo may become a more popular sport throughout the world.

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