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Typical injuries after bicycle accident - what role has the bicycle helmet to play? G. Kelsch, M. U. Helber, C. Ulrich: Abteilung für Unfallchirurgie, Klinik am Eichert, 73006 Göppingen, Deutschland

In a prospective study the particular injuries of 76 bicyclists who required 1994 in-patient treatment in our department were analysed. There were 50 male and 26 female bicyclists, with a median age of 33 years (range: 4-87 years). The most frequent diagnosis was in 50 % (n=38) a head injury. 63 bicyclist (83 %) did not wear a helmet. 33 of these sustained a head injury whereas this entity in the helmet group could only be found in 38 % (5 out of 13). Remarkable is the fact, that a higher-degree head injury did not occur in the helmet group. In 24 of these 33 head injured patients (73 %) without a helmet additional intra- and extracranial diagnoses could be made: a pathologic EEG in 18 patients (55 %), a skull fracture in 13 patients (39 %), an intracerebral haemorrhagic contusion in 4 patients (12 %) and an increase of the intracerebral pressure (edema) in 3 patients (9 %). In contrast to these findings only 2 of 5 patients (40 %) of the helmet group showed slight changes in the EEG. In our opinion the bicycle helmet is able to reduce the incidence and the grade of a head injury significantly, particular as we had 2 death in the non helmet group and none in the helmet group. So the use of a bicycle helmet is strongly advocated.

Sporting activity after burst fractures of the thoracic and lumbar spine. R. Stiletto, N. Nowacki, L. Gotzen: Department for Trauma Surgery Philipps-University Marburg, Germany

In a retrospective clinical trial we analyzed sporting ability and performance of 23 patients (11 women and 12 men) aged between 20 and 40 years out of a total of 120 patients who were operated on between 1986 and 1993 after a burst fracture of the thoracic and lumbar spine. The median ISS was 32.3 patients were paralyzed after the accident. In 7 cases an anterior, in 14 cases a posterior and in 2 cases a combined anterior and posterior stabilization was performed. During the follow-up the pain scale of Denis (P1-P4) was used for measuring the individual patient's pain. Sporting performance was measured by a score determining the participation level of the patients in each sport before and after the injury as well as their performance level. The results show that most patients exercised sports on the same, in some cases even on a higher level than before the injury. In kinds of sport where high compression strain of the spine with a rotatory component occur, patients often changed their sport. In many cases the patients did not quit their sports because of lacking ability, but for non-medical reasons. Two of the paralyzed patients now practise wheelchair sport on a competition level. The evaluation of the pain scale values showed that 73% of the patients had no pain, 13% light, 8.6% moderate and 4.3% severe pain. The results show that a surgically stabilized spine allows an early mobilization and sporting activities even after a severe burst fracture.

Biochemical and clinical examinations on the effects of regular applications of gelatine on degenerative damages of the motoric system. F. Beuker, T. Eck, J. Rosenfeld: Department of Sports Medicine, Sports Institute, Heinrich-Heine-University, Düsseldorf, Germany

Several versions of gelatine-products promise preventative or therapeutic effects on the motoric system. There are hardly any other studies on this field. Methodical aspects: 20 sport students (average age 24 years) underwent a physical training following strength/endurance training methodes (circuit system) for one hour three times a week over a period of three month. Half of the group was given 10 g gelatine hydrolysat, the other half received a placebo. Every four weeks the amino acid profiles in serum were examined with high-pressure fluid chromatography. A second, geriatric group of people (n=100) was treated with a daily dosis of 10 g gelatine hydrolysat over six month, too. The movability and the amount of pain at the most important joints was examined regularly by objective methods. The same scheme of treatment was given to a group of patients (n=40) of a doctor of sports medicine, which suffered from chronical degeneration of the connective tissue, too. The changes of condition were examined regularly by objective medical methods and by examination with standardized question schemes filled in by the patients. The aminograms showed a significant increase of hydroxyproline with the gelatine group but not with the placebo group. The same is valid with citruline. Other amino acids stayed untouched by the application of gelatine. A key effect of gelatine on the prostaglandine production could be a reason. With the geriatric group a significant difference on the frequency of positive treatment results of the gelatine group in correlation to other patients (40.4 : 18.5 %) could be showed.

Athletic activity with alloarthroplasty: what is recommended, what is not recommended. J. Jerosch, J. Heisel, S. Fuchs: Westfälische-Wilhelms-Universität Münster, Department of Orthopaedic Surgery Institute of Sports Medicine Special Clinical Hospitals Hohenurach, Münster, Bad Urach, Germany

In a survey 510 departments for rehabilitation care were asked for their treatment concepts for patients after total hip and knee replacement. In these departments an average of 276 (5-1995) patients after total hip arthroplasties (THA) and 107 (3-609) after total knee arthroplasties (TKR) were treated. In general athletic activities like soccer, volleyball or downhill skiing were not recommended. Jogging, tracking, and tennis were seen quite indifferent, whereas biking, swimming, gymnastics and walking on a plain ground were recommended. However, there was quite a range in the recommendations. During the postoperative rehabilitation period 29.2% of all departments treated the patients by following the surgeons recommendations. The other physicians just recommended a short period of weight protection for the patients with cemented endoprosthesis. This was true for both THA and TKR. Similar tendencies could be seen for the recommendations concerning partial or full partial weight bearing. Instability and infection were seen as significant contraindications for sports activities, whereas muscle insufficiency, overweight, and revision endoprosthesis were only judged as relative contraindications. Patients with an alloarthroplasty have to be exposed to athletic activities on an individual base with the right mixture between positive stabilising exercises and negative overload of the joint.