with alginate microspheres, took place. In vivo experiments were then carried out where wounds were harvested at day 1, 3 and 6 post wounding, and results analyzed macroscopically and microscopically. It was found that Cx43 asODN coated microspheres showed enhanced wound healing with advanced granulation tissue, faster re-epithelialisation, a down-regulation of Cx43 expression in the murine epidemis and less inflammatory response compared to wounds containing uncoated microspheres. However, bioactivated microspheres still showed a slower healing rate than no treatment wounds (acting as the control group). With further optimization of alginate microspheres, such Cx43 asODN gel coated microspheres could still be used as effective dermal substitutes in the future and have an important role to play in wound healing.

0690: ULTRASOUND INVESTIGATION OF VASTUS MEDIALIS OBLIQUE MUSCLE ARCHITECTURE: AN IN-VIVO STUDY
Shandy Engelia, Antonios Tony, Claire Robertson, Alban Killingback, Philip Adams. St George’s, University of London, London, UK.
Aims: There is a significant relationship between the architecture of the vastus medialis oblique (VMO) and patellofemoral pain syndrome (PFPS). Historical data are largely derived from older populations, whereas PFPS commonly affects younger populations. This study aims to gather ultrasound data of the VMO architecture in young asymptomatic adults to provide baseline values for comparison with symptomatic sufferers.
Methods: The VMO fibre angle and insertion ratio were measured. The insertion ratio represents the proportion of the patella, which has the muscle fibres attaching to its medial border. Eighty knees from 40 subjects (18 males, 22 females, age range 20-30) were assessed with ultrasound. Individual Tegner-scores were recorded.
Results: The mean fibre angle and insertion ratio were 56.6° and 57.8%, respectively, with no significant difference between age groups. The insertion ratio was significantly higher among females. The fibre angle increased and the insertion ratio decreased as the Tegner-score increased.
Conclusion: The VMO fibre angle is not age related. There was a degree of overlap in the fibre angle values between healthy and pathological knees suggesting that the cause of PFPS is multifactorial. An individual’s VMO architecture may be affected by their physical activity level, which could have important implications for PFPS.

0798: VEIN GRAFT TO AUGMENT FLEXOR TENDON REPAIRS — FEASIBILITY AND BIOMECHANICS
Mike Rodger, 1 Princess Elizabeth Orthopaedic Centre, Royal Devon and Exeter Hospital, Exeter, UK; 2 Cardiff University, Cardiff, UK.
Tendon rupture can cause substantial dysfunction and the best option for restoration of function is primary repair of the tendon. During rehabilitation movement to prevent adherence is associated with rupture and the tendon repair weakens during the early stages of healing. A gap of 3 mm predicts failure from either the repair snagging on surrounding structures or from a failure of new tendon to bridge the gap. This experimental work assesses the feasibility of using a vein sleeve graft to augment a standard repair, a technique that has not been published before. It is hoped that a vein sleeve may represent a biological scaffold for tendon repair, it bridges early gaps and may confer improved biomechanical properties on the repair.
This work was undertaken to explore a new direction of applied surgical practice in order to make an incremental improvement in clinical outcome. In practice a vein may be harvested from the patient at the time of the tendon repair. Vein graft represents a cheap source of augmentation de novo technique in tendon repair, it bridges early gaps and may confer improved biomechanical properties on the repair before. It is hoped that a vein sleeve may represent a biological scaffold for tendon repair, it bridges early gaps and may confer improved biomechanical properties on the repair. This experimental work assesses the feasibility of using a vein sleeve graft to augment a standard repair, a technique that has not been published before. It is hoped that a vein sleeve may represent a biological scaffold for tendon repair, it bridges early gaps and may confer improved biomechanical properties on the repair.

1191: FLUID MANAGEMENT OF THE SURGICAL PATIENT: RE-AUDIT
Shaukat Majid, Joanna Tremlett, Michael Rees, Vincent Chamary. Royal Gwent Hospital, Newport, UK.
Aim: Fluid management is critical. The British Consensus Guidelines for Intravenous Fluid Therapy for Adult Surgical Patients (GIFTASUP) recommend the use of balanced salt solutions to replace normal saline for resuscitation/replacement. For maintenance, patients should receive 40-80mmol/day potassium. Previous audit three months earlier at our hospital had shown poor awareness/compliance. We therefore re-audited fluid management on all three general surgical wards a month after presenting the study at our surgical meeting.
Methods: General surgical in-patients prescribed more than one litre of fluids over 24 hours were included. This was over two consecutive working weeks divided into 24-hour episodes. Data was collected prospectively using the same proforma from initial study. Patients were divided into three groups — maintenance/NBM without gastrointestinal losses, replacement/patients with gastrointestinal losses and supplementary.
Results: There were 88 24hr episodes. Normal saline usage was 50%(15/30) and 36%(17/47) in the maintenance and supplementary groups respectively. Potassium usage 57%(17/30) and 64%(7/11) in the maintenance and replacement groups respectively. In our previous audit normal saline usage was 60%(17/28) and 54%(19/35) in the maintenance and supplementary groups. Potassium usage 32%(9/28) and 66% in the maintenance and replacement groups.
Discussion: Presentation of initial audit did improve compliance to the guidelines. We suggest that fluid management be included into mandatory surgical induction/teaching.

1223: AN INVESTIGATION INTO PERIOSTEAL THICKNESS AT COMMON OSTEOPOROTIC FRACTURE SITES
Aims: The periosteum is increasingly considered to be implicated in bony pathologies, such as osteoporosis. This study aimed to investigate whether changes in the periosteum can be associated with osteoporotic risk factors, in particular age and sex, at common osteoporotic fracture sites.
Methods: Six cadavers (3 males and 3 females, mean age 81 years) providing two femoral necks and two distal radii, and two distal ulnae were dissected. These were sectioned, decalcified and histologically stained. Using light microscopy, the periosteal thickness was measured. One-way ANOVA and F-test were used for statistical analysis.
Results: Mean periosteal thickness for males was greater at all sites, in particular age and sex, at common osteoporotic fracture sites. One-way ANOVA and f-test were used for statistical analysis.
Discussion: Presentation of initial audit did improve compliance to the guidelines. We suggest that fluid management be included into mandatory surgical induction/teaching.