

Author (year)	Title	Methods	P-Participants	I-Intervention	C-Control group	O-Outcome
Andrish (1974)	A Prospective Study on the Management of Shin Splints	RCT - Quote (from correspondence): "The randomization was by a computer generated (random number) list."	Location: United States Naval Academy, USA. 2777 first year midshipmen undergoing summer training program Age: not stated - Quote (from correspondence): "They were all Midshipmen (no women at the Academy in those days) between the age of 17 and 23." Exclusion criteria: none stated - Quote (from correspondence): "I think we took all comers."	Intervention groups 1. Use of 1.3 cm thick foam rubber heel pad taped inside tennis shoes for running. Normal physical education program (N=344 men). 2. Stretching exercises of gastrocnemius and soleus for 9 x (15s / 5s rest); 3 times per day. Normal physical education program (N=300). 3. Use of heel pad and stretching exercises. Normal physical education program (N=463). 4. Graduated running program (one third distance run in the first week, two thirds in the second week) prior to normal physical education program (N=217).	Control group (N=1453): normal physical education program with no additional intervention.	Length of follow up: duration of summer training program. Outcomes: 1. Tibial stress fracture diagnosed by self-reported leg pain and confirmation by roentgenograms (tibial periosteal reaction and callus formation). 2. Medial tibial stress syndrome (shin splint or pain in the leg) through self-reporting during training. 3. Compliance.
Bensel (1976)	The Effects of Tropical and Leather Combat Boots on Lower Extremity Disorders Among US Marine Corps Recruits	qRCT Individually randomised Period of study: From June 22, 1975 to September 14, 1975	Location: US Marine Corps Recruit Depot, San Diego, California. 990 men who began Marine Corps recruit and start a 12-week training program. Age: not stated. - Quote (from correspondence): "The majority of recruits were between the ages of 16 and 40." Exclusion criteria: none stated. - Quote (from correspondence): "No, there were no exclusion criteria for participants."	Intervention group (N=372): Tropical combat boots: The uppers have a full, lace closure system and are of a cotton/nylon blend with a 2.54-cm wide, nylon tape up the back and around the top and a 5.08-cm wide, nylon webbing diagonally across the ankle. The leather insole is split into two pieces and a 0.28-cm thick, stainless steel plate is inserted between the pieces and stitched around the periphery for spike protection. The rubber outsole is direct molded to the upper.	Control group (N=414): Standard leather combat boots: A full, lace closure system, grain-out leather upper, plain toe vamp, removable Saran inserts, and an outside leather counter pocket. The rubber outsole is direct molded to the upper and consists of a full, transverse chevron, outer sole and heel.	Length of follow up: Twelve weeks (77 days) of training. Outcomes: Theses 17 types of foot problems were looked for in 4 systematic exams thought out the training program and additional medical consultation according to symptoms: blister, heel contusion, clinical stress, cellulitis, tendinitis, stress fracture, lace irritation/lesion, ingrown nail, ankle sprain, callus, athlete's foot, anterior metatarsalgia, retrocalcaneal bursitis, corn, synovitis, plantar fasciitis and toe paresthesia. The stress fractures were diagnosed with positive radiographical identification.
Finestone (1999)	Prevention of Stress Fractures Using Custom Biomechanical Shoe Orthoses	RCT Individually randomised	Location: Israel (military base) 404 infantry recruits participated in a 14-week basic training. Age: 17.7 – 27.3 years (mean age 18.77) Exclusion criteria: none stated. - Quote (from correspondence): "Any recruit who came to army induction with his own custom orthotics was excluded from the study." - Quote (from correspondence): "There are only males in this type of infantry training in the Israel Defense Forces."	Intervention groups Goup #1 (N = 132): Custom-made semi-rigid foot orthoses (feet were casted non-weight bearing in the neutral subtalar position by a trained orthotist. Orthoses: 3/4 length polypropylene modules with integrated neutral rearfoot posts). All recruits wore special infantry boots with basketball shoes. The shoe has a full height leather upper and a flat insole board. Goup #2 (N = 132): Custom-made soft biomechanical orthoses (impressions of the feet were made in the neutral subtalar position with the recruit partially weight bearing. Orthoses: full length with neutral hindfoot posts, molded from polyurethane.) All recruits wore special infantry boots with basketball shoes. The shoe has a full height leather upper and a flat insole board.	Control group Goup #3 (N = 126): Simple shoe insoles (Impressions were made of the feet, but the impressions were not used. Orthoses: Prefabricated full length flat insoles made of a 3-mm layer of crosslinked polyolefin foam covered by a layer of cambrel). All recruits wore special infantry boots with basketball shoes. The shoe has a full height leather upper and a flat insole board.	Length of follow up: 14 week training period. Analyze the effects of 3 different types of orthoses (Custom-made semi-rigid foot orthoses, custom-made soft biomechanical orthoses, simple shoe insoles) on: 1. Stress fracture (incidence and location, diagnosed by a systematic clinical examination of an orthopaedist every 2 weeks and secondarily by technetium 99 methylene diphosphonate bone scintigraphy.) 2. Compliance (Recruits who completed basic training in their assigned orthoses) 3. Comfort (score 1 to 4)

Finestone (2004a)	A prospective study of the effect of foot orthoses composition and fabrication on comfort and the incidence of overuse injuries	RCT Individually randomised	<b>Location:</b> Israel (military base) <b>451</b> male infantry recruits participated in 14 weeks of basic training. <b>Age:</b> mean age 18.74 (SD 0.72) years <b>Exclusion criteria:</b> none stated.	<b>Intervention group #1</b> (N = 227): soft custom-made orthoses (impression of the feet by an orthotist with the feet in an approximate neutral subtalar position and partial weightbearing. Orthoses : full-length molded neutral hindfoot posts orthoses made with polyethylene). All recruits wore standard high-top leather army infantry boots.	<b>Control group #2</b> (N = 224): soft prefabricated orthoses (impression of both feet done by a orthotist with the feet in an approximate neutral subtalar position. Foot impressions made for groups #1 and #2, but used only in the custom-made group #1. Orthoses : full-length prefabricated orthoses made with polyethylene). All recruits wore standard high-top leather army infantry boots.	<b>Length of follow up:</b> 14 week training period Analyze the effects of two different types of orthoses (soft custom-made orthoses and soft prefabricated orthoses) on: 1. Compliance (Recruits who completed basic training in their assigned orthoses) 2. Comfort (1-4 scale) 3. Stress fracture (diagnosed by clinical examination only) 4. Ankle sprain 5. Foot problems
Finestone (2004b)	A prospective study of the effect of foot orthoses composition and fabrication on comfort and the incidence of overuse injuries	RCT Individually randomised <b>Period of study:</b> unknown	<b>Location:</b> Israel (different military base than the first part of the study) <b>423</b> male infantry recruits participated in 14 weeks of basic training. <b>Age:</b> mean 18.91 (SD 1.1) years <b>Exclusion criteria:</b> none stated.	<b>Intervention group #3</b> (N = 215): semirigid biomechanical orthoses (Foot casted in the neutral subtalar position by a trained orthotist. Orthoses : Three-fourths length ortholene modules with acrylic neutral rearfoot posts topped by a full length ethylene vinyl acetate). All recruits wore standard high-top leather army infantry boots.	<b>Control group #4</b> (N = 208): semirigid prefabricated orthoses (Foot casted in the neutral subtalar position by a trained orthotist. Foot impressions made for groups #3 and #4, but used only in the custom-made group #3. Orthoses dispensed according to the shoes size : three-fourths length ortholene modules with acrylic neutral rearfoot posts topped by a full length ethylene vinyl acetate). All recruits wore standard high-top leather army infantry boots.	<b>Length of follow up:</b> 14 week training period Analyze the effects of two different types of orthoses (soft custom-made orthoses and soft prefabricated orthoses) on: 1. Compliance (recruits who completed basic training in their assigned orthoses) 2. Comfort (1-4 scale) 3. Stress fracture (diagnosed by clinical examination only) 4. Ankle sprain 5. Foot problems
Franklyn-Miller (2011)	Foot Orthoses in the Prevention of Injury in Initial Military Training : A Randomized Controlled Trial	RCT Individually randomised <b>Period of study:</b> December 2005 and was completed in July 2007	<b>Location:</b> UK (Britannia Royal Naval College) <b>400</b> male and female new-entry officer cadets participated in an 11-week training program <b>Age:</b> 24-25 years average <b>Exclusion criteria:</b> - preexisting orthotic use, - previous lower limb injury (<6 months), - consent withdrawal - demonstrating low risk at biomechanical assessment (according to the result of the gait assessment test achieves by the software Footscan 7.0 Gait 2nd Generation, RScan International), determining no corrections to do with the orthoses.	<b>Intervention group</b> (N = 200): semicustomized D3D orthoses (after testing by a plantar pressure software, prescription was e-mailed to the company and an orthosis was generated and sent by mail. D3D ethelene vinyl acetate orthoses were a modular injection-molded device, available in different densities and arch profiles, with 4 specific fixed areas of variable correction applied, where the D3D software recommended).	<b>Control group</b> (N = 200): no intervention (neither a shoe insert nor an orthosis)	<b>Length of follow up:</b> 7-week training period . Analyze the effects of an orthoses (semi-customized orthoses) to no intervention, on the incidence of overuse lower limb injury (define as requiring removal from physical training for 2 or more days). Overuse injury required a diagnosis of : 1. Stress fractures (Tibial, metatarsal, femoral neck - confirmed by plain film and magnetic resonance imaging.) 2. Other lower limb sectioned pathologies (anterior knee pain, iliotibial band syndrome, patellofemoral pain syndrome, medial tibial stress syndrome, chronic exertional compartment syndrome, Achilles tendinopathy, or plantar fasciitis - confirmed by physical examination and clinical signs).

Gardner (1988)	Prevention of lower extremity stress fractures, a controlled trial of a shock absorbent insole	<p>qRCT</p> <p>Quasi-randomised cluster (allocation by odd and even numbered platoons)</p> <p>- Quote (from report): Boots with polymer insoles were issued to trainees who were assigned to even-numbered platoons. Boots with a standard mesh insole were issued to members of odd numbered platoons.</p> <p>Period of study: 1985</p>	<p>Location: US Marine Training Center, Parris Island, Carolina, USA</p> <p>3025 United States Marine basic training recruits underwent 12 week basic training program.</p> <p>Age: Range 18 to 41 (mean 20, SD 0.02) years</p> <p>Exclusion criteria: not stated</p>	<p>Intervention groups (N = 1557): shock absorbent insoles (Sorbothane, viscoelastic polymer, in standard marine boots)</p>	<p>Control group (N = 1468): standard mesh insoles (in standard marine boots)</p>	<p>Length of follow up: 12 week training period</p> <p>Analyze the effects of shock absorbent insoles to standard mesh insoles, on:</p> <ol style="list-style-type: none"> <li>1. Stress fractures incidence or stress reactions of bone in the lower limb (above the foot, and in the foot). Diagnosis made by clinical evaluation (clinically significant symptoms) and by radiological examination (X-Ray confirmed stress fractures)</li> <li>2. Other lower limb injuries (plantar fasciitis, ankle sprains, knee strains and sprains, Achilles tendonitis)</li> </ol>
Milgrom, (1985)	A Prospective Study of the Effect of a Shock-Absorbing Orthotic Device on the Incidence of Stress Fractures in Military Recruits	<p>qRCT</p> <p>- Quote (from report): "Just before beginning training, "military stress orthotics" were given at random to 143 of the 295 recruits allowed to do basic training."</p> <p>Period of study: 1983</p>	<p>Location: Israel (military base)</p> <p>295 male military recruits participated in 14 week training period</p> <p>Age: not stated</p> <p>Exclusion criteria: not clarified except that 17 of the initial 312 recruits were not allowed to begin basic training for various nonorthopaedic reasons.</p>	<p>Intervention groups (N = 143): Military stress orthotics insole (Langer Biomechanics group: Prefabricated semi-rigid shell made of polyolefin with post angled at 3" varus and top cover laminated with a moisture resistant expanded vinyl) in the army combat boot.</p>	<p>Control group (N = 152): Boots without orthotic insoles or shoe insert.</p>	<p>Length of follow up: 14 week training period.</p> <p>Analyze the effects of an orthoses (Prefabricated semi-rigid orthoses) to no intervention, on:</p> <ol style="list-style-type: none"> <li>1. Incidence stress fractures (clinical examination followed by whole body scintigraphy, plus spot views of the feet, tibias, knees, and femurs - diagnosed on the basis of a positive x-ray film and/or positive scintigram)</li> <li>2. Comfort</li> <li>3. Compliance (discontinuation of the orthoses)</li> </ol>
Milgrom (1992)	Prevention of Overuse Injuries of the Foot by Improved Shoe Shock Attenuation. A Randomized Prospective Study.	<p>qRCT</p> <p>Individually randomised</p> <p>Period of study: 1988</p> <p>- Quote (from correspondence): "The end digit of the soldiers military identity numbers was use (odd versus even) to randomize the shoes."</p>	<p>Location: Israel (Military bases)</p> <p>390 male Israeli Army recruits beginning a 14 week basic training program.</p> <p>Age: not stated</p> <p>Exclusion criteria: not stated</p>	<p>Intervention groups (N = 187): Modified basketball shoes ('high top', leather uppers colored to correspond to standard infantry shoes, soles of ethylene vinyl acetate, upper seal with silicone glue, sprayed with a water repellent)</p>	<p>Control group (N = 203): Standard infantry boots (soles made of molded double-density polyurethane)</p>	<p>Length of follow up: 14-week training period (plus 1 month if unsolved problem)</p> <p>Analyze the effects of a modified basketball shoes to standard infantry boots, on:</p> <ol style="list-style-type: none"> <li>1. Stress fractures incidence (clinical examination followed by scintigraphy if symptom persist after 3 days of rest)</li> <li>2. Other lower limb overuse injuries (anterior knee pain, medial knee pain, tendonitis, Achilles tendonitis, foot problems)</li> <li>3. Satisfaction of the shoes by a questionnaire</li> </ol>

Pope (1998)	Effects of ankle dorsiflexion range and pre-exercise calf muscle stretching on injury risk in Army recruits	<p>qRCT</p> <p>Cluster randomised by platoon (N = 26)</p> <p><b>Period of study:</b> September 1992 to May 1993</p>	<p><b>Location:</b> 1st Recruit Training Battalion, Kapooka, New South Wales, Australia.</p> <p><b>1093</b> male Army recruits undertaking 12 weeks of intensive training (average 47 hours / week)</p> <p><b>Age:</b> range 17 to 35 years</p> <p><b>Exclusion criteria:</b></p> <ul style="list-style-type: none"> <li>- Pre-existing injury at the recruiting medical examination</li> <li>- Previous injury between the time of the recruiting medical examination and arrival at Kapooka (the Army site)</li> </ul>	<p><b>Intervention group (N = 549):</b> stretches to the gastrocnemius and soleus muscles before training (2 x 20 seconds static stretches, once every second day, on average) in every warm-up session.</p>	<p><b>Control group (N = 544):</b> stretches to the wrist flexors and triceps muscle (2 x 20 seconds static stretches, once every second day, on average) in every warm-up session.</p>	<p><b>Length of follow up:</b> 12 week training period</p> <p><b>Analyze the incidence</b> of stress fractures and other lower limb injuries according to the following procedure:</p> <ul style="list-style-type: none"> <li>- Self-reported to medical assistants or nursing staff (first screening);</li> <li>- Diagnosis confirmed by regimental officer and physiotherapist's examination (second stage);</li> <li>- Confirmation by positive bone scan or x-ray if suspicion of stress fractures of the foot or the tibia (third stage);</li> <li>- The regimental medical officer referred to the researchers (final stage)</li> </ul>
Pope (2000)	A randomized trial of preexercise stretching for prevention of lower-limb injury	<p>qRCT</p> <p>Cluster quasi-randomised by platoon (N = 39)</p> <p><b>Period of study:</b> January to December 1994</p>	<p><b>Location:</b> 1st Recruit Training Battalion, Kapooka, New South Wales, Australia.</p> <p><b>1538</b> male Army recruits undertaking 12 weeks of intensive training (40 sessions totaling 50 h)</p> <p><b>Age:</b> range 17 to 35 years</p> <p><b>Exclusion criteria:</b></p> <ul style="list-style-type: none"> <li>- History of significant injury</li> <li>- Not a good general health</li> <li>- Aged under 17 or older than 35</li> <li>- Psychologically unsuitable</li> </ul>	<p><b>Intervention group (N = 735):</b> stretches to gastrocnemius, soleus, hamstrings, quadriceps, hip adductor and hip flexor muscle groups, (1 x 20 seconds static stretches, once every second day, on average) during the warm-up before all physical training sessions.</p>	<p><b>Control group (N = 803):</b> only warm up activities but no stretching exercises.</p>	<p><b>Length of follow up:</b> 12 weeks training period</p> <p><b>Incidence</b> of all lower-limb injuries including stress fractures (tibia, foot, femur, fibula, Ilium, pubic rami) done by the following procedure:</p> <ul style="list-style-type: none"> <li>- Self-reported to medical assistants or nursing staff;</li> <li>- Referred injured recruits to the regimental medical officer if the recruit was unable to resume full duties without signs or symptoms within 3 days;</li> <li>- Diagnosis was confirmed by radiographs, CT scan, or bone scan;</li> <li>- The regimental medical officer referred to the researchers.</li> </ul>