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An open letter to those who make employee benefit decisions:

In the last decade, it has become increasingly apparent to myself and many others that the care of the foot has become important to improving the quality of life and work for those in the Western world. In the book *Hallux Valgus and Forefoot Surgery* (Churchill Livingstone, 1994) I pointed out how the incidence of bunions is well documented to be 10 times higher in shoe wearing populations than in non-shoe wearing populations. There also seems to be little evidence that this incidence is decreasing, despite the significant research that has gone into shoe designs. In studies of the incidence of foot problems, Greenberg noted that in any one year, 17.5% of the American population will suffer from a foot problem. [Greenberg, JAPMA Vol 83 (1993): 475-483]. It is estimated that 80% of the public will suffer at least once with a foot disorder during their lifetime. It is also well documented in my book that the incidence of foot deformity increases with age. Thus, with the "graying of America" as the baby boom generation starts reaching retirement years, it is to be easily prognosticated that the number of foot deformities will increase. (Leville SG, Am J Epidemiol Vol 148 (Oct 1998): 657-65; Benvenuti F, J Am Geriatr Soc Vol 43 (May 1995): 479-84). This increase is due to the wear and tear of walking, as well as the number of individuals who suffer from structural foot problems.

Of great interest to medical practitioners is the relationship between the biomechanical dysfunction of the foot and other orthopedic problems in the knee and back. Beginning with the publication of *The Running Foot Doctor* by Dr. Steven Subotnick in 1975, podiatry has become increasingly involved with the pain complaints by athletes in their knees. George Sheehan, M.D., who wrote a medical advice column for the magazine *Runner's World*, shifted his view of the importance of podiatry for the athlete to the point that after a few years he began advising runners that if they were having knee pain, they should consult their podiatrist first before consulting their orthopedic surgeon. A recent conversation with Dr. William Olson, who has worked for a number of years at St. Francis hospital in San Francisco – the largest Sports Medicine clinic in the USA – recently informed me that all patients with patello-femoral syndrome are considered to be podiatric patients. He also has been doing a lot of work with osteoarthritis in knee patients and is reporting that 90% of those are showing improvement in their symptoms by attending a podiatrist. He has not produced any papers yet to report these findings. Others though, have shown that orthotic insoles can markedly reduce the symptoms of osteoarthritis of the knee [Uchio Y, J Bone Joint Surg Br Vol 82 (Jul 2000): 724-7; Ogata K, Int Orthop Vol 21 (1997): 308-12]

The questions that any employer should ask, then, is, **"how can a podiatric foot care program help my business?"**

Before answering this question, I would like to point out that podiatry has been a leader in the health field for many years, especially in breaking down traditional

paradigms that were keeping the cost of health care high without any real benefit to the patient. One of the most glaring examples of this was the pioneering of outpatient surgery, concepts that in the 1960s were considered renegade by orthodox hospitals, but by the 1990's had become the standard of care for most hospitals. In the 1980's the U.S. government reconsidered their policy toward custom footwear for diabetics, after very intense research was able to show that custom made footwear was a way to markedly save millions of health dollars in preventing ulcerations and amputations. Now podiatry is beginning to enter the field of corporate health care and can save companies significant resources both directly and indirectly. Many companies have foot care programs, but research to date has not produced any references, as practitioners involved with these programs are reluctant to release any information.

At any rate, what I hope to bring to light is statistical research which persuasively demonstrates that a corporation will save money directly and indirectly by incorporating a podiatry plan within their employee health care program. My points will be directed at the corporation saving money by 1) decreasing injury and/or the need for surgery of the foot, knee, hip and back, 2) decreasing rehabilitation times and time off of work when injury and/or surgery occurs, and 3) increasing worker productivity and worker satisfaction. I would expound a little more by having you consider the following attainable goals which an employee podiatry program could bring to any corporation.

GOAL 1: Decrease foot pain and fatigue while standing and walking. Achieving this goal has many direct and indirect benefits in the workplace. These include greater capacity to perform weight bearing activities. It is well documented that people with less foot pain will be able to stand longer, will have longer step length and will be able to walk faster. The indirect benefit of less mental fatigue and greater job satisfaction cannot be underestimated. Workers who don't feel fatigued physically can work with greater concentration on their work and need less time to rest. It is recognized that no one has actually measured these benefits, however it is my opinion (as well as the opinion of other clinical experts) from our own clinical experiences as well as the limited published research, that if foot pain and fatigue can be decreased by 50% that worker productivity may be expected to increase by at least 10%.

GOAL 2: Decrease the number of foot deformities that develop. Common corns calluses and bunions are a major reason for patients having foot surgery. Many reports indicate the efficacy of functional orthotics to decrease the incidence of bunions as well as many other problems. It is the opinion of myself as well as most other foot experts, that the number of foot surgeries would be reduced by at least 50% when those who are prone to develop foot deformities are identified early and are treated prophylactically.

GOAL 3: Decrease the number of days absent from work when injury occurs. This involves not only timely treatment, but also treatment that is aimed at creating more efficient function after injury in order to decrease disability times. Dr. Dananberg recently has been quoted as saying, "People do not limp because they hurt, they hurt because they limp." (See the article "Shoe Inserts may relieve low back pain" at <http://www.persoanlmd.com/news/a1999032402.shtml>). In deed, many injuries occur because of a predisposition of the biomechanical function of the lower extremity. (Messier SP, Med Sci Sports Exerc Vol 20 (Oct 1988): 50-5). These same

biomechanical parameters continue to produce abnormal torques, which result in tissues remaining under constant strain which slows down their healing. Additionally, many surgeries correct deformities of the bones or the ligaments in the foot, however few surgeons ever address the problem of why the patient originally developed the deformity. They fail to ask, "What abnormal torques led to the deformity." As a result many of the limbs subjected to surgery continue to have abnormal torques being applied during the gait cycle - thus the structures that were repaired continue to suffer pain. There is not a foot practitioner who doesn't go at least a week without hearing the classical story of the patient who had a bunionectomy who took 6-12 months to recuperate. Many years ago, Dr. Root told me, "If you treat a patient with foot orthotics for 6 months before doing bunion surgery, you will have a much shorter rehabilitation period after surgery." I and many other of Dr. Root's followers have found this clinically to be correct, with my estimate that doing such decreases by 50% the rehabilitation time needed after bunion surgery.

GOAL 4: Decrease the risk of foot problems in those who suffer from chronic diseases, including diabetes. It is well documented that diabetes is increasingly affecting the population, with type two diabetes being the most common. The incidence in those of Native American ancestry can almost be described as epidemic. The amputation rates from relatively minor foot ailments and injuries is astonishing, hence the inclusion of diabetic foot care programs in major health programs. The U.S. Dept of Veterans Affairs has implemented in the last 5 years the Prevention of Amputation program in which every diabetic is evaluated annually for risk of ulceration. Based on research work performed for the U.S. government in the late 1980's, the U.S. Medicare program added custom shoe therapy and orthotics for those with documented diabetic peripheral vascular disease or documented peripheral neuropathy. It is my recommendation that any corporation which hires people who may have diabetes, implement similar programs for annual risk factor analysis, including gait analysis, to decrease the risk of pressure ulcerations.

GOAL 5: Decrease the postural symptoms of knee pain and lower back pain which do not necessarily keep patients from being on the job, but which impact on the endurance of the worker to perform his/her job as well as create mental fatigue and depression. It is well recognized that 80% of all lower back pain is considered to be "non-descript" meaning that no actual pathology can be identified. A recent study showed that only 1/3 of working adults had never had an episode of lower back pain, and of the 2/3 who did, 42% reported persisting symptoms. [Waxman, Spine Vol 25 (2000): 2085-90.]. This has been treated conservatively over the years by various modalities, including physical therapy, manipulative therapy (Chiropractic), exercise therapy, massage therapy, and non-steroidal anti-inflammatory drugs. While all of these are shown to help, the simple fact that symptoms tend to be recurrent indicates that many times causative factors are not being addressed. Based on literature as well as clinical experience, it is my opinion that over 50% of the chronic non-descript back pain patients have, may be effectively treated with foot mechanical devices (orthotics). My recommendation is that if a person requires more than 4 visits to a physical medicine provider for chronic pain, then podiatric evaluation and probable treatment is indicated. I would also recommend that anyone contemplating back surgery be first evaluated by a podiatrist for foot function. My expectation would be that the number of people electing for back surgery will be reduced by 50%. I do not think I need to elaborate

what the cost savings would be to any company's health plan if this number of back injuries/surgeries could be avoided.

GOAL 6: Decrease employee down time or rehabilitation time for those who undergo major orthopedic surgery of the knee, hip and spine. As an example, I am currently collecting data on patients who have had knee replacement surgery and have found a major number of these have Q angles that are greater after surgery than before surgery. Almost all of these people have had problems with continuing knee symptoms even after surgery. I recently brought this to the attention of Dr. Jack Engsborg, a noted researcher at the University of Calgary. A sudden change in Q angle will markedly change the foot-ground interaction pattern, which can have drastic impact on the foot function which will then translate into abnormal toques on the replacement knee. As a result, we are recommending that all patients who have had knee replacements be evaluated for mechanical foot function in order that any abnormal knee torques may be minimized. As to back surgery, the failure rate post surgery is reported to be quite high and a majority of patients continue to suffer from back pain. (Agazzi S, J Neurosurg (2 Suppl, 19999): 186-92). In my current position at the VA hospital, hardly a day goes by with seeing someone who was forced into a job retraining program after a serious injury, especially after back surgery. With the Dananberg paper, one is led to believe that almost all people who undergone back surgery should be evaluated for optimum foot function and it is expected that a great majority of those who continue to suffer from post surgical back pain will benefit from changing the foot function.

In summary, then, the potential savings to a company's health care plan when incorporating podiatry could be considerable. It would be anticipated that a direct 10% savings would be expected in the first year by decreasing the number of foot, knee and back injuries/surgeries and by decreasing the rehabilitation time for those requiring these procedures. It is also conservatively projected that between 10% - 15% less time off of work would be required for employee problems dealing with the lower extremities and axial skelton. Given the number of sick days in American due to back and other related problems, this is a significant savings. There is also an indirect benefit to the employer in having employees who have less discomfort on the job and thereby showing increased productivity.

As the costs of orthotics and a corporate foot care program are minimal, and the benefits as explained are significant, it is the opinion of many of the current leaders in the biomechanical world, that a Company that adopts a foot care program should expect to see a significant savings in financial resources and demonstrate a substantial decrease in worker sick days, downtime and unproductivity.

Sincerely,



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Personal Biography

After obtaining his Doctor of Podiatric Medicine degree in 1979, Dr. Phillips has devoted himself to promoting biomechanics through practice, research and professional instruction. As a result of his accomplishments, Dr. Phillips is well known and respected in both North American and International circles. He has published several articles on biomechanics and has been the recipient of 3 Stickel awards and 1 Schol award. Of great interest has been the subtalar joint and midtarsal joint mechanics. He has lectured at the International Congress of Biomechanics and has been invited as an expert to lecture on three continents. In addition to his research activities, Dr. Phillips has contributed to several podiatric text chapters on biomechanical theory and practice. Dr. Phillips spent 10 years teaching biomechanics at the College of Podiatric Medicine and Surgery in Des Moines, Iowa where he was also appointed as Assistant Dean. He then left undergraduate teaching to concentrate on research and teaching biomechanics in the post-graduate arena. Dr. Phillips is Board Certified by the ABPOPPM and is Chief of Podiatry at the Coatesville VA hospital. Dr. Phillips is also Vice-President of the John H. Weed Foundation which is devoted to the teaching of advanced biomechanics.