

## Call for neater team healthcare for diabetic foot

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Regardless of enormous effort we put, diabetic foot remains challenging for physicians, surgeons, scientists, patients, and the society. Diabetic foot is a complicated pathogenesis progress, with nerve, vessels, local pressure, inflammation and infections involved. Better blood sugar control, local debridement, wound care, and tissue regenerative are quite essential for better outcome. Neater team healthcare is essential to prevent leg amputation. Better diabetes control effort shall be carried by diabetologists, patients, nutrition, diabetic educators and family and social support. Positive attitude and stress management can be practiced by patients, family, psychiatrists, psychologists, activists, social workers. The local necrotic tissues, infections, inflammation and other insults block the oxygenation and nutrition of the vessels and tissues, and as such prevent the wound from healing. Thorough debridement carried by wound care nurses, surgeons, and practitioners shall lay a whole picture of the patient's situation, as well as the local blood supply and infections, cautions shall be paid for the direction of tunnels and oozing to make sure excessive discharge drained well, to offer a fresh, better oxygenated, and relatively healthier setting that promotes the growth of new tissues and vessels. Tips like avoiding pressure/weight on the foot, elevation of the lower limbs, comfort and fit footwear and shoes, regular self-checking of the feet with/without mirror shall reminded and urged by patients themselves, the family, nurses and physicians. Vascular surgeons may do their best to reconstruct the blood supply. Orthopedic surgeons may take effort to salvage as neat as possible.

Stem cell bioengineering can be applied for tissue and vessel regeneration after the debridement, with a

nice scientific team work consist of bioengineers, cell scientists, immunologists, bioconduct companies, pharmacists, physical therapists, experts for regenerative medicine etc. Mesenchymal derived stem cells (MDSC) and adipocytes derived stem cells (ADMS) can be autologous or endogenous. Endogenous stem cells and tissue-engineered implant can be applied with immunopression with scalable tech using biconstruct transplantation. Exosome from stem cells culture media is found rich in MALAT1 that is essential for wound healing. Local injection of neural growth factor (NGF), TPO, soluble stem cell recruitment factors (SDF-1), inflammation-modulators, progenitors, nitrate oxide (NO), hypoxia indicible factor (HIF-1a) can promote the growth of vessels, angiogenesis, and the regeneration of the tissues. Local light energy can also be used for better outcome. No man can move the mountain along. With neater team healthcare, not only it will benefit diabetic foot, but wound care and regenerative medicine of any kind.

### Speaker Biography

Cheryl Wang earned her MD at Binzhou Medical College, MSc., Endocrinology and metabolism, internal medicine in Shanghai Second Medical University (now Shanghai Jiaotong University), PhD in Science, Endocrinology and metabolism, internal medicine at PLA medical college. She did internal medicine residency and trained as an Endocrinologist in Donying People's Hospital, China, did surgery residency at Mount Sinai and Rutgers in the United States. She was awarded numerous times for variety of accomplishment, three KL2s from NIH, the first place award at UTHSCSA research day, Federation Medical Golden Prize scholarship, scholarship for many times, excellent student almost every academic year, excellent student officer awards, excellent female student nominee, excellent graduation award, and many awards for mathematics, speech, and variety of contests. Above all, she had accomplished her masterpiece, her hard-won wisdom, "happy booster-how positive attitude promotes health, reduces stress, enhances performance, accelerates success and boosts happiness", the best of America and Chinese best, the most positive energy ever, and a Nobel Prize "Winner-to-be".

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