

Correlates of diabetic foot complications identified

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Image courtesy of Blausen Medical

For patients with diabetes, increased poly(ADP-ribose) immunoreactivity, reduced abundance of type 1 procollagen, and impaired skin structure correlate with foot complications, according to a study published online June 29 in *Diabetes Care*.

(HealthDay) -- For patients with diabetes, increased poly(ADP-ribose) (PAR) immunoreactivity, reduced abundance of type 1 procollagen, and impaired skin structure correlate with foot complications, according to a study published online June 29 in *Diabetes Care*.

Abd A. Tahrani, M.D., from the University of Birmingham in the United Kingdom, and colleagues examined whether high-risk patients exhibit skin structural and metabolic deficits that predispose to foot complications. Participants included nine control patients with diabetes, 16 patients with [diabetic peripheral neuropathy](#) (DPN) alone, 21 with recurrent diabetic foot ulceration (DFU), and 14 controls without diabetes. Intraepidermal [nerve fiber](#) density (IENFD), structural analysis,

type 1 procollagen abundance, tissue degrading [matrix metalloproteinases](#) (MMPs), and PAR immunoreactivity were measured using skin punch biopsies from the upper and lower leg skin.

The researchers found that diabetes and DPN decreased IENFD, with no difference noted between the neuropathic groups. In neuropathic subjects, especially in the DFU group, skin structural deficit scores were increased. Compared with controls without diabetes, individuals with DFUs had reduced abundance of type 1 procollagen. Activation of [MMP-1](#) and [MMP-2](#) was seen with diabetes. Compared with other DPN patients, those with DFU had increased PAR immunoreactivity.

"In conclusion, increased PAR polymerase, reduced type 1 procollagen, and impaired skin structure are associated with the development of foot complications in diabetes and may constitute novel biomarkers to identify patients at maximal risk," the authors write. "Therapies aimed at improving skin quality also warrant consideration as an approach to reduce DFU."

The study was partially funded by Eli Lilly.

More information: [Abstract](#)
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