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Mayo Clinic Proceedings Publishes New Insulin Injection and Infusion Recommendations

New Recommendations Based on Findings from Largest-Ever International Survey of more than 13,200 Insulin-Injecting Patients from 42 Countries

FRANKLIN LAKES, N.J., Sept. 1, 2016 /PRNewswire/ -- The prestigious medical journal, [Mayo Clinic Proceedings](#), today published new insulin delivery recommendations for health care professionals caring for insulin-using patients, including the results from the largest injection technique survey ever performed for people with diabetes.

Three articles will appear in the September print issue of the publication – with new research showing that many patients with diabetes are using insulin incorrectly and not getting the maximum benefit from this life-saving medication. Proper injection and infusion technique is critical to insulin's consistent action and may be as important as the medication or diet and activity. These findings provide a clear roadmap for better clinical management of insulin use for people with diabetes and for their health care providers.

Dr. Kenneth Strauss, co-author and medical director, BD Europe stated, "FITTER and these publications set new standards for insulin delivery. Tools are embedded in these publications, which will allow patients and professionals to quickly translate them into everyday practice. If these recommendations become routine practice, we should soon see the improved outcomes that come from optimized insulin delivery."

The analysis of this landmark injection technique survey is the result of a BD (Becton, Dickinson and Company) sponsored international workshop known as the [Forum for Injection Technique & Therapy Expert Recommendations](#) (FITTER). This international congress included **183 diabetes experts** from **54 countries** and took place October 2015 in Rome. Two of the papers published in *Mayo Clinic Proceedings* address the key findings from this injection technique survey and a third paper presents the new insulin delivery recommendations, intended to help shape local and regional injection guidelines around the world.

Insulin Injection Technique Survey Key Takeaways:

- Many patients taking insulin are using needles that are longer and thicker than recommended, and are reusing the needles frequently.
- One-third of those taking insulin have nodules or bumps in the fat tissue at their injection sites (a condition known as lipohypertrophy, or lipos). This is associated with incorrect rotation of injection sites and is also problematic with insulin infused via pumps.
 - If patients inject into lipos, the absorption of insulin is blunted and highly variable. This may cause patients to react by injecting more insulin, which puts them at

- risk of unexpected glucose swings and dangerous hypoglycemia.
- Despite using more insulin, patients with lipos have worse glucose control, increasing their risk for eye, kidney and nerve complications.

The third publication, "**New Recommendations for Insulin Delivery**" is based on these survey findings as analyzed by participants of the FITTER international congress.

The new FITTER recommendations include:

- Use the shortest available pen needle (currently 4mm) or syringe needle (currently 6mm) for all injecting patients, regardless of age, sex or body size.
 - The shortest needle length is less painful, has higher patient acceptance and gives comparable glucose control.
 - By contrast, excessively long needles increase a patient's risk of intramuscular injections, which can accelerate insulin uptake and action, increasing glucose variability and risk of hypoglycemia.
- Correct rotation of injection sites can reduce the frequency of lipohypertrophy. Such reductions should improve glycemic control and clinical outcomes, reduce insulin consumption and thereby lower health care costs.
- Limit use of pen needles and syringes to one-time, as reusing needles is not an optimal injection practice because they are no longer sterile after use.

The **new FITTER recommendations** also contain important sections dealing with optimal insulin pump and infusion set guidance, as well as recommendations for use of safety-engineered injection devices for people who give injections, such as healthcare workers. In conclusion, adherence to these recommendations may lead to better injection and infusion experience for patients, safer injections by HCWs, and improved glucose control, which reduces the risk of long-term complications and saves health care dollars.

"BD's purpose of *advancing the world of health* expands far beyond the products we make. We partner with health care professionals around the world to publish evidence-based practices in peer-reviewed publications and create educational tools that can help people with diabetes achieve better clinical outcomes," said Dr. Laurence Hirsch, co-author and worldwide vice president of Medical Affairs for BD Diabetes Care. "These new recommendations will help health care professionals and people with diabetes who take insulin to better manage their treatment."

Dr. Anders H. Frid, lead author and Diabetologist at the Skane University Hospital, Malmö in Sweden added, "For more than 30 years, I have been studying injection sites, injection technique and insulin absorption. It is a wonderful accomplishment to now have comprehensive and evidence-based recommendations around proper needle use and good injection practices published in a major journal for health care professionals and people with diabetes around the world to access."

Also included in the articles were evidence-based "**Golden Rules**" developed for Proper Injection Technique for Adults and Children; Treating and Preventing Lipohypertrophy, Psychological Issues around Insulin Delivery and Needle stick Injuries and Sharps Disposal. To review all of the studies in more detail and to view the "Golden Rules", please visit: mayoclinicproceedings.org or <http://www.fitter4diabetes.com>.

About BD

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health by improving medical discovery, diagnostics and the delivery of care. BD leads in patient and health care worker safety and the technologies that enable medical research and clinical laboratories. The company provides innovative solutions that help advance medical research and genomics, enhance the diagnosis of infectious disease and cancer, improve medication management, promote infection prevention, equip surgical and interventional procedures, optimize respiratory care and support the management of diabetes. The company partners with organizations around the world to address some of the most challenging global health issues. BD has more than 45,000 associates across 50 countries who work in close collaboration with customers and partners to help enhance outcomes, lower health care delivery costs, increase efficiencies, improve health care safety and expand access to health. For more information on BD, please visit bd.com.

Contacts:

Matt Coppola
BD Public Relations
201.847.7370
matthew_r_coppola@bd.com

Monique N. Dolecki
BD Investor Relations
201.847.5378
monique_dolecki@bd.com

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