

BD Introduces Advanced Needle Technology Designed to Enhance Patient Comfort and Improve Patient Adherence in Diabetes Care

BD Ultra-Fine™ Nano 4mm Pen Needles with PentaPoint™ Comfort are first to feature patented 5-bevel needle tip able to penetrate skin more easily for patients who require insulin injection

Studies suggest that as many as one-fifth to one-third of people with diabetes are hesitant or unwilling to give themselves insulin injections for reasons that include needle anxiety[i-iii]. Patients who reported injection-related pain or embarrassment also admitted they intentionally skipped insulin injections more often. A study by the American Association of Diabetes Educators (AADE) revealed that 47% of people with diabetes would be more likely to administer their injections regularly if a product were available that would ease the pain and discomfort of injections[iv]. With these needs in mind, BD Medical, a segment of BD (Becton, Dickinson and Company) (NYSE: BDX), a leading global medical technology company, announced today the launch in the U.S. of the BD Ultra-Fine™ Nano Pen Needle with PentaPoint™ Comfort.

BD's latest advancement in injection comfort, PentaPoint is a patented 5-bevel needle tip design that creates a flatter, thinner surface to help penetrate the skin with significantly greater ease. In a clinical home-use study, patients who inject insulin found BD's 5-bevel pen needles to be significantly less painful, easier to insert, more comfortable and preferred overall when compared with current 3-bevel pen needles[v]. Bench tests showed the modified PentaPoint needle tip reduces the force to penetrate the skin by 23% compared to 3-bevel pen needles.

In recent years, advances in needle manufacturing technology, along with shorter and thinner needles, have been associated with progressively improving patient self-rating of injection comfort[vi]. At 4mm by 32 gauge, BD Ultra-Fine Nano is the shortest, thinnest pen needle available, is clinically demonstrated to enhance comfort, and provides a less intimidating injection experience. Combined with a one-handed injection technique and its ability to facilitate flexible site rotation, BD Ultra-Fine Nano may help improve adherence to diabetes therapy regimens to support better health outcomes. PentaPoint Comfort is an enhancement to BD Nano, reflecting that a modified needle tip can further advance patient comfort.

“BD Diabetes Care has been a leader in diabetes injection devices for over 85 years, and is committed to helping improve patients’ transition and adherence to injectable therapies by improving the efficacy, convenience and comfort of medication delivery. We are excited to provide another first-to-market innovation, designed to dramatically improve the injection experience for the millions of people living with diabetes,” commented Linda Tharby, President, BD Medical – Diabetes Care. “Building on the introduction of BD’s smallest needle, the BD Nano, we are

confident that our new, patented PentaPoint Comfort technology will provide an even more comfortable injection experience. This will help enable patients to adopt and adhere more easily to the therapy regimens recommended to improve their outcomes.”

The AADE issued injection technique strategies that encourage the use of the smallest possible needle for improved patient comfort and insulin efficacy[vii]. The BD Nano 4mm Pen Needle is proven to be as effective as longer needles for patients of various body types[viii], and provides equivalent glucose control by effectively delivering the insulin dose to subcutaneous tissue (the layer of fat below the skin), the recommended site for insulin injections[ix], and reducing the risk of injecting into muscle[x]. Intramuscular injection can accelerate insulin absorption and increase the risk of unanticipated hypoglycemia (abnormally low blood sugar)[xi, xii]. Subcutaneous injection allows the insulin to be absorbed at an appropriate rate, resulting in better glycemic control[xiii]. For more information, visit www.bd.com/nano [1].

About Diabetes

Diabetes is a disease in which the body has a shortage of insulin or a decreased ability to use insulin, a hormone that allows glucose (sugar) to enter cells and be converted to energy. When diabetes is not controlled, glucose and fats remain in the blood and, over time, damage vital organs. Diabetes has become a national health concern in the United States, with an estimated 26 million people - 8.3 percent of the population - living with the disease. Of those people, an estimated 18.8 million have been diagnosed with diabetes, and another 7 million are thought to be undiagnosed. If current trends continue, as many as one of three U.S. adults will have diabetes by 2050[xiv]. The total annual cost of diagnosed diabetes in the United States is an estimated \$174 billion[xv].

About BD

BD is a leading global medical technology company that develops, manufactures and sells medical devices, instrument systems and reagents. The Company is dedicated to improving people's health throughout the world. BD is focused on improving drug delivery, enhancing the quality and speed of diagnosing infectious diseases and cancers, and advancing research, discovery and production of new drugs and vaccines. BD's capabilities are instrumental in combating many of the world's most pressing diseases. Founded in 1897 and headquartered in Franklin Lakes, New Jersey, BD employs approximately 29,000 associates in more than 50 countries throughout the world. The Company serves healthcare institutions, life science researchers, clinical laboratories, the pharmaceutical industry and the general public. For more information, please visit www.bd.com [2].

References

[i] Zambanini, A., Newson, R.B., Maisey, M., Feher, M.D. (1999). Injection related anxiety in insulin-treated diabetes. *Diabetes Research and Clinical Practice*, 46, 239-246.

[ii] Klobassa, N., Moreland, P. (2012, January 10). Psychological insulin resistance stems from fear. *MayoClinic.com Living with Diabetes Blog*, Message posted to

<http://www.mayoclinic.com/health/psychological-insulin-resistance/MY01165>

[iii] Nam, S., Chesla, C., Stotts, N.A., et al. (2010). Factors associated with psychological insulin resistance in individuals with Type 2 diabetes. *Diabetes Care*, 33, 1747-1749.

[iv] AADE Injection Impact Survey, 2007. Retrieved May 10, 2012, from <http://www.injectionimpact.com>

[v] Hirsch, L., Gibney, M., Berube, J., Manacchio, J. (2012). The impact of a modified needle tip geometry on penetration force as well as acceptability, preference and perceived pain in subjects with diabetes.. *Journal of Diabetes Science and Technology*, 6, 328-335

[vi] Aronson, R. (2012). The role of comfort and discomfort in insulin therapy. *Diabetes Technology & Therapeutics*, 14, 1-7. doi:10.1089/dia.2012.0038

[vii] Siminerio, L., Kulkarni, K., Meece, J, et al. (2011). Strategies for insulin injection therapy in diabetes self-management, *Diabetes Educator*, 37, S1-S10.

[viii] Hirsch, L., Klaff, L., Bailey, T. et al.,(2010). Comparative glycemic control, safety and patient ratings for a new 4 mm\32G insulin pen needle in adults with diabetes *Current Medical Research and Opinion*, 26, 1531-1541.

[ix] Frid, A. (2006). Fat thickness and insulin administration, what do we know? *Infusystems International*, 5, 17-19.

[x] [Gibney, M.A](#) [3]., [Arce, C.H](#) [4]., [Byron, K.J](#) [5]., [Hirsch, L.J](#) [6]., (2010). Skin and subcutaneous adipose layer thickness in adults with diabetes at sites used for insulin injections: implications for needle length recommendations. *Diabetes Care* [7] 26, 1519-30.

[xi] Polak, M., Beregszaszi, M., Belarbi, N., et al. (1996). Subcutaneous or intramuscular injections of insulin in children: are we injecting where we think we are? *Diabetes Care*, 19, 1434-1436.

[xii] Birkebaek, N.H., Solvig, J., Hansen, B., et al. (2008). A 4-mm needle reduces the risk of intramuscular injections without increasing backflow to skin surface in lean diabetic children and adults. *Diabetes Care*, 31, e65.

[xiii] Hofman, P.L., Lawton, S.A., Peart, J.M., et al. (2007). An angled insertion technique using 6-mm needles markedly reduces the risk of intramuscular injections in children and adolescents. *Diabetic Medicine*, 24,1400-1405.

[xiv] Boyle, J.P., Thompson, T.J., Gregg, E.W., et al. (2010). Projection of the year 2050 burden of diabetes in the U.S. adult population: dynamic modeling of incidence, mortality, and prediabetes prevalence. *Population Health Metrics*. <http://www.pophealthmetrics.com/content/8/1/29> [8].

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[xv] Centers for Disease Control and Prevention. National diabetes fact sheet: national estimates and general information on diabetes and prediabetes in the United States, (2011). Atlanta, GA: Retrieved from http://www.cdc.gov/diabetes/pubs/pdf/ndfs_2011.pdf [9]

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Links:

[1] <http://www.bd.com/nano>

[2] <http://www.bd.com/>

[3]

<http://www.ncbi.nlm.nih.gov/pubmed?term=%22Gibney%20MA%22%5BAuthor%5D>

[4] <http://www.ncbi.nlm.nih.gov/pubmed?term=%22Arce%20CH%22%5BAuthor%5D>

[5]

<http://www.ncbi.nlm.nih.gov/pubmed?term=%22Byron%20KJ%22%5BAuthor%5D>

[6]

<http://www.ncbi.nlm.nih.gov/pubmed?term=%22Hirsch%20LJ%22%5BAuthor%5D>

[7] <http://www.ncbi.nlm.nih.gov/pubmed?term=Skin%20and%20subcutaneous%20adipose%20layer%20thickness%20in%20adults%20with%20diabetes%20at%20sites%20used%20for%20insulin%20injections:%20Implications%20for%20needle%20length%20recommendations>

[8] <http://www.pophealthmetrics.com/content/8/1/29>

[9] http://www.cdc.gov/diabetes/pubs/pdf/ndfs_2011.pdf