

How to inject your diabetes medication: The 5 Golden Rules<sup>1</sup>

For adults and children





# A new approach to your injections<sup>1</sup>



If you inject diabetes medication, you should know how important correct injection technique is for effectively managing your diabetes. Your pen needle or syringe, type of medication and rotation of injection sites all play a critical role which can lead to better treatment results.<sup>1</sup>

The following Golden Rules can help you better manage your diabetes.<sup>1</sup>

#### Always inject into the healthy fatty layer under your skin<sup>1</sup>

For your medication to work properly, it needs to be injected into the fatty layer under

your skin, avoiding the muscle.2

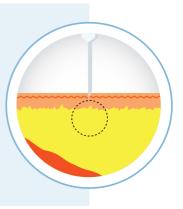
It is also important to use a new site for every injection. Do not inject into the same injection site repeatedly.1

If you inject into the muscle, a scar, or any area where your skin feels thick or lumpy, your medication may not work the way it's supposed to and may lead to changes in your blood glucose levels.<sup>1,4</sup>

#### Did you know?

On average your skin is only 1.9mm to 2.4mm thick, so you don't need a needle much longer than that to reach the fatty layer.2

Ask your healthcare professional about the BD Ultra-Fine™ 4mm Pen Needle to help you manage your diabetes.



When inserted at 90 degrees to the skin, BD Ultra-Fine™ 4mm Pen Needles ensure your diabetes medication is injected into the fat layer over 99.5% of the time, at all injection sites.<sup>2</sup>

# 4mm pen needles, inserted at 90° are recommended for all adults and children<sup>1\*</sup>

A 4mm pen needle is considered the safest for adults and children regardless of your age, sex, ethnicity or body weight.<sup>1</sup>

This is because a 4mm pen needle is short enough to pass through the skin with little risk of injecting a muscle.<sup>1</sup>



Because it's so short, you can inject a 4mm pen needle straight into your skin at 90 degrees without a skin fold.1\*

Ask your healthcare professional

The BD Ultra-Fine™ 4mm Pen Needle - the recommended pen needle length for all adults and children.¹



\*Children 6 years and under and very thin adults should perform a skin fold and inject at 90°. Note that a 2-finger skin fold usually prevents injection into the muscle in children, but is much less effective in the thigh than in the abdomen.<sup>1</sup>

Always consult your Healthcare Professional regarding treatment of your diabetes.

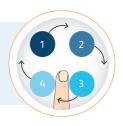
# Inject your medication into areas on your abdomen, thighs, and buttocks<sup>1</sup>

Rotate your injection sites properly to help keep all of your sites and skin tissue healthy.1 Injection sites can be rotated from one body area to another however your abdomen, thighs, and buttocks can absorb diabetes medication differently.1

Talk to your healthcare professional about developing an injection site rotation plan that works for you.

#### Remember:

Inject one finger-width away from your last injection. A single injection site should not be used more than once every 4 weeks.<sup>1</sup>



# **Check** your injection sites for lumps and bumps<sup>1</sup>

Thickened skin or rubbery lumps and bumps can build up in the fatty layer under the skin at your injection sites.<sup>4</sup>

Do not inject into these lumps and bumps. These areas are called 'lipos'. 1

You should check your injection sites for these lumps and bumps on a



regular basis. If you inject into these lumps and bumps, your medication may not control your diabetes the way it's supposed to.<sup>1</sup>

To avoid developing these lumps and bumps, be sure to:1

- Inject your medication into a new site with every injection.
- Use a new needle for *every* injection.

Your healthcare professional should also help you check for them, and mark any lipos that are of concern.<sup>1</sup>

#### Always use a new needle

to avoid developing lumps and bumps that can affect how your medication is absorbed. Using a new needle every time you inject can also help minimise pain.<sup>4</sup>



# **Rotate** your injection sites properly<sup>1</sup>

It's important to rotate your injection sites to retain healthy skin and reduce your risk of developing lumps and bumps (lipos).<sup>1</sup>

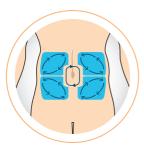
When you rotate your injection sites properly, your skin can heal between injections.<sup>1</sup>



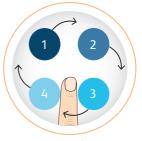
1. Choose an area.



**2.** Divide that area into four quadrants.



3. Select a site within a quadrant to start injecting.
Use one quadrant per week.



 Inject one finger-width away from your last injection.

**Adults:** Inject approximately 1cm away from the belly button if using a 4mm or 5mm pen needle length.

**Children:** Insert the needle 2 adult fingerbreadths away from the belly button, and avoid any protruding bones.

If using a longer pen needle consult your healthcare professional.

Try not to use an injection site more than once every four weeks.<sup>1</sup>

#### The BD Ultra-Fine™ 4mm Pen Needle

# Healthy injection habits and a comfortable injection experience can make a real difference

- Less effort to inject medication for people with hand strength issues<sup>5†</sup>
- BD's smallest, thinnest pen needle is suitable for adults and children with diabetes<sup>1,5+</sup>
- Faster injections<sup>5†</sup>
- Fits all leading diabetes medication pens.<sup>†</sup>





- + Compared to standard BD thin wall pen needles.
- ‡ As of November 2020.

#### References

- 1. Frid AH, Kreugel G, Grassi G et al. Mayo Clin Proc. 2016;91(9):1231-1255.
- 2. Gibney MA, Arce CH, Byron KJ et al. Curr Med Res Opin. 2010;26(6):1519-1530.
- 3. Johansson UB, Armsberg S, Hannerz L et al. Diabetes Care. 2005;28:8:2025–2027.
- 4. Blanco M, Hernandez M, Strauss K et al. Diabetes Metab. 2013; 39(5): 445-53.
- 5. Aronson R, Gibney MA, Oza K et al. Clin Ther. 2013;35(7):923-933.

Provided to Healthcare Professionals for distribution to people with diabetes for educational purposes.

Always consult your Healthcare Professional regarding treatment of your diabetes. BD Pen Needles are used to inject diabetes medication.

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### Injecting your diabetes medication

Follow these recommendations for a comfortable and effective injection.<sup>1,§</sup> #

#### 1. Mix your medication (only for NPH and mixed insulins)\*





If your medication is meant to be cloudy, roll and tip your medication pen 10 times until it is evenly cloudy.

#### 3. Prime the pen and dial up your dose\*

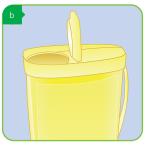




Prime the needle with 2 units of medication so that you can see at least a drop of liquid at the needle tip. Then dial your correct dose.

#### 5. Remove and dispose the pen needle





Withdraw the pen needle, remove it from the pen device and discard it into a sharps collector.

#### 2. Set up a new pen needle onto your medication pen



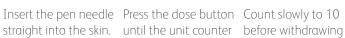


Fit a new needle to the pen, making sure that the needle is in line with the pen.

Screw on the pen needle then remove the outer and inner caps.

#### 4. Insert the needle, inject the dose and hold







returns to zero.



the pen needle.

#### Storing your medication

#### DO

- Store any unopened medication in the fridge.
- Keep the pen you are using at room temperature (below 30°C).

#### DON'T

- Let your medication freeze.
- Keep your medication in any places where it might get hot, such as in the car or by a window.



#### Talk to your Healthcare Professional about which needle length is appropriate for you

# Recommended needle length BD Ultra-Fine™ Pen Needle 4mm x 32G (0.23mm) NDSS Product Code: 266 BD Ultra-Fine™ Pen Needle 5mm x 31G (0.25mm) NDSS Product Code: 97

#### Benefits of BD Ultra-Fine™ Pen Needles

- 5-bevel needle tip ensures a more gentle and comfortable injection experience<sup>2#</sup>
- Less effort and time to inject for people with hand strength issues<sup>3,§</sup>
- BD Ultra-Fine<sup>™</sup> Pen Needles are suitable for most people with diabetes and compatible with leading brands of pen devices.<sup>1</sup>^



BD Pen Needles are used to inject diabetes medications.

Always read the label and consult your healthcare professional regarding treatment of your diabetes.

^ As at March 2020.

§ Compared to standard BD thin wall pen needles.

# Compared to standard BD 3-bevel pen needles.

References

1. Frid AH, Kreugel G, Grassi G et al. Mayo Clin Proc. September 2016:91(9):1231-1255. 2. Hirsch L, Gibney M, Berube J, Manocchio J. J Diabetes Sci Technol. 2012; 6(2): 328-335. 3. Aronson R, Gibney, Oza K. et al. Clin Ther. 2013; 35: 923–933.

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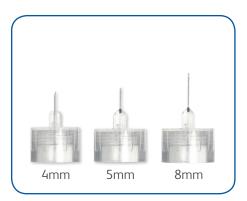




### Injection technique recommendations<sup>1</sup>

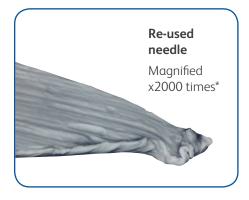
Follow these recommendations for a comfortable and effective injection.<sup>1,§</sup> #

The correct injection technique can help you manage your diabetes more easily.<sup>1,§</sup>



#### Use a short needle

- Use a 4mm or 5mm pen needle to ensure your medication is delivered into the fatty layer below the skin surface, avoiding the muscle.<sup>1</sup>
- Injecting your medication into a muscle can make your medication work too quickly causing low blood glucose levels.<sup>1</sup>
- Short needle lengths (4mm and 5mm pen needles) are recommended for adults, children, and those who are overweight.<sup>1\*</sup>

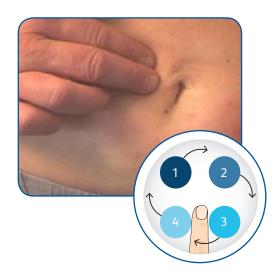


#### Use a new needle for every injection

- Use pen needles and syringes once and discard after use.1
- Do not leave pen needles attached to your medication pen.
   Air and contaminants can affect dose accuracy and your blood glucose levels.<sup>1</sup>
- Re-using needles can increase the risk of:
  - needles bending and breaking, which can affect the delivery of your medication.<sup>2,3</sup>
  - pain and discomfort, which may result in bruising and bleeding.<sup>3,4</sup>

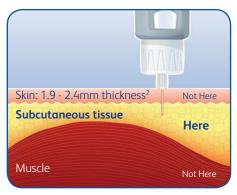


#### Injection technique guidelines



#### Rotate your injection sites properly

- Recommended injection and infusion sites are the abdomen, thigh, and buttocks.<sup>1</sup>
- Always inject at least one finger-width away from your previous injection site.<sup>1</sup>
- If you inject into the same site, you may develop fatty lumps and bumps at your injection site which may stop your medication working properly.<sup>1</sup>
- Talk to your healthcare professional about an injection site rotation plan.<sup>1</sup>



#### Check your injection technique<sup>~</sup>

- Use a new needle for *every* injection.
- Don't push the needle hub in so deeply that it indents the skin. This may inject your medication into the muscle.<sup>1</sup>
- Use α new injection site for *every* injection.<sup>1</sup>
- Depress the plunger slowly and fully to ensure all your medication is injected.<sup>1</sup>
- Count to 10 after the plunger is fully depressed before removing the needle.<sup>1~</sup>

# The BD Ultra-Fine™ Pen Needle with EasyFlow™ Technology

- 5-bevel needle tip ensures a more gentle and comfortable injection experience.<sup>5#</sup>
- Less effort and time to inject for people with hand strength issues.<sup>45</sup>
- BD Ultra-Fine<sup>™</sup> Pen Needles are suitable for most people with diabetes and are compatible with leading brands of pen devices.¹^





NDSS Product Code: 97

BD Pen Needles are used to inject diabetes medications. Always read the label and consult your healthcare professional regarding treatment of your diabetes.

#### References

1. Frid AH, Kreugel G, Grassi G. Mayo Clin Proc. September 2016:91(9):1231-1255. 2. BD Data on file. 07D015070015ReuseWP. 2006. 3. Look D, Strauss K. Diabetes Journal 1998; (10): 31-34. 4. Misnikova IV, Dreval AV, Gubkina VA et al. J Diabetology. 2011; 1(1): 1-5. 5. Hirsch L, Gibney M, Berube J, et al J. J Diabetes Sci Technol. 2012; 6(2): 328-335. 6. Aronson R, Gibney, Oza K. et al. Clin Ther. 2013; 35: 923–933.

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<sup>^</sup> As at March 2019.

<sup>\*</sup> Photographs from dieter Look and Kenneth Strauss: 'Nadeln mehrfach verwenden?' Diabetes Journal 1998, 10:S. 31-34.

<sup>§</sup> Compared to standard BD thin wall pen needles. # Compared to standard BD 3-bevel pen needles.

<sup>~</sup> Always follow the instructions of the pen manufacturer.



# For people new to injecting diabetes medication



#### Where should you inject?

#### Common injection areas<sup>1</sup>



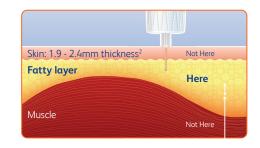
- Abdomen
- Thighs
- Buttocks

#### Inject below the skin

Diabetes medications need to be injected into the fatty layer, just below the skin.<sup>2</sup>

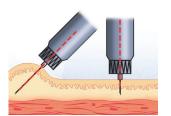
If you inject your medication into the muscle layer it may not work properly, and could cause:1

- Variable blood glucose levels
- Pain
- Bruising



#### Inject safely

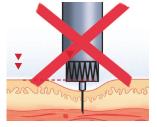






Always keep the needle at the same angle until it is withdrawn from the skin to avoid the needle bending.





Do not push the pen too hard into the skin or the needle may reach the muscle.

#### \* Very slim adults may need a lifted skin fold at all sites. Children using a 5mm pen needle or longer should be switched to a 4mm pen needle if possible and if not, should always use a lifted skin fold.<sup>3</sup>

# Which pen needle is right for you?<sup>3</sup>

Pen needles come in different lengths and thicknesses.

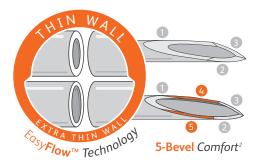
Your healthcare professional should recommend a pen needle that is suitable for you.





4mm and 5mm pen needles are suitable for virtually all people who inject their diabetes medication including children, adults and those who are overweight. Short needles ensure your medication is injected in the right place, help to minimise pain and other complications.

# The benefits of using BD Ultra-Fine™ Pen Needles:



- The extra-thin wall needle results in faster injections.<sup>4§</sup>
- 5-bevel comfort ensures less force is required to gently ease the needle tip into the skin.<sup>5#</sup>
- Reduces the risk of injecting your medication into the muscle compared to longer needles.<sup>2</sup>
- Provides a more comfortable injection compared to 6mm and 8mm pen needles.<sup>4,5\$#</sup>

§ Compared to standard BD thin wall pen needles. # Compared to standard BD 3-bevel pen needles.

<sup>\*</sup> Very slim adults and young children may need a lifted skin fold at all sites.3

# Steps to injecting your diabetes medication with BD Ultra-Fine™ Pen Needles¹

It's important to ask your healthcare professional to demonstrate how to inject your medication.





#### 1. Mix your medication (only for NPH and mixed insulins)^





If your medication is meant to be cloudy, roll and tip your medication pen 10 times until it is evenly cloudy.

#### 2. Set up a new pen needle onto your medication pen





Fit a new pen needle to your pen device in a straight line.

Do not attach the pen needle at an angle as this may bend, block or break the needle.

Screw on the pen needle then remove the outer and inner caps.

#### 3. Prime the pen and dial up your dose^





Prime the needle with 2 units of medication and press the dose button until the counter returns to zero. If you do not see at least a drop of liquid at the needle tip, repeat. This ensures the pen is working properly and the medication is free of air bubbles.

Then dial your correct dose.

#### 4. Insert the needle, inject the dose and hold







Press the dose button until the unit counter returns to zero.



Count slowly to 10 before withdrawing the pen needle.

#### 5. Remove and dispose the pen needle





Withdraw the pen needle, remove it from the pen device and discard it into a sharps collector.

Use a new needle for every injection.

<sup>^</sup>These are general recommendations. Always follow the instructions for use provided by the manufacturer of your diabetes medication.

#### Lipohypertrophy (lipo)<sup>1</sup>

#### What is lipo?

Lipo is a build up of fatty lumps that occur when you inject your diabetes medication repeatedly into the same spot.

Lipos don't absorb medication in the same way as healthy tissue and can lead to a higher risk of high and low blood glucose levels.<sup>1</sup>

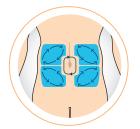


#### Rotate your injections to avoid lipo

Talk to your healthcare professional about an appropriate injection site rotation plan.



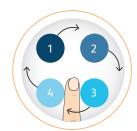
1. Choose an area



3. Select a site within a quadrant to start injecting. Use one quadrant per week.



**2.** Divide that area into four quadrants.



**4.** Inject one finger-width away from your last injection. A single injection site should not be used more than once every 4 weeks.<sup>7</sup>

# Pen Needles are single-use only<sup>1</sup>

The tip of the needle becomes damaged with repeated use and can cause damage to your skin as shown in these images.\*



New needle Magnified 370 times



**Used needle**Magnified 370 times



Same used needle Magnified 2000 times

### Reusing pen needles can cause damage to your skin and may make injections more painful.

- Lipohypertrophy
- Needle bending and breaking
- Pain and discomfort

- Bruising and bleeding
- Skin infections
- Medication dosing inaccuracy



Remember
Use a new
needle for every
injection

<sup>#</sup> Photographs from Dieter Look and Kenneth Strauss: "Nadeln mehrfach verwenden?" Diabetes Journal 1998, 10:S.31-34

#### Storing your medication

#### DO

- Store any unopened medication in the fridge.
- Keep the pen you are using at room temperature (below 30°C).

#### DON'T

- Let your medication freeze.
- Keep your medication in any places where it might get hot, such as in the car or by a window.

# Ask your pharmacist for BD Ultra-Fine™ Pen Needles



BD Pen Needles are used to inject diabetes medications. Always read the label and consult your healthcare professional regarding treatment of your diabetes.

References: 1. Frid A, Hirsch L, Gaspar R. et al. Diabetes Metab. 2010; 36: S3-S18. 2. Gibney M et al. Curr Med Res Opin. 2010; 26(6):1519-1530.

3. Australian Diabetes Educators Association (ADEA). Clinical Guiding Principles for Subcutaneous Injection Technique, December 2019..

4. Aronson R, Gibney, Oza K. et al. Clin Ther. 2013; 35: 923–933 5. Hirsch L, Gibney M, Berube J, Manocchio J. J Diabetes Sci Technol. 2012; 6(2): 328-335. 6. Misnikova I, Dreval A, Gubkina V, Rusanova E. J Diabetol. 2011; 1:(1)1-5. 7. Frid AH, Kreugel G, Grassi G et al. Mayo Clin Proc. 2016;91(9):1231–1255. 8. BD Data on File. 07D015070015ReuseWP. 2006. 9. Ginsberg BH, Strauss K. Diabetes Care. 2004 Jul; 27(7): 1851-1852.

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### Injecting your diabetes medication

#### 1. Mix your medication if you need





- ☐ Mix medication☐ Don't mix medication
- 3. Test the pen\*





- ☐ Always test
- $\square$  Only test the first dose with a new pen

# 2. Attach a new pen needle to your pen device



#### 4. Dial up your medication dose



Select your correct medication dose on the pen.

#### 5. Inject your medication









Insert the needle into your skin and inject your medication.

## 6. Remove the needle from your pen device.



Dispose the needle in a sharps container.



### Injection technique recommendations

Follow these recommendations to help manage your diabetes.1



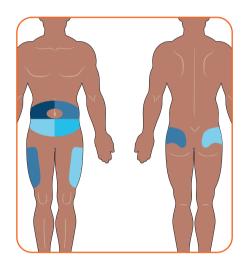
#### Always use a short pen needle^

- 4mm
- 5mm<sup>†</sup>



#### Use a new pen needle for every injection to avoid:2,3

- pain
- needles bending or breaking
- damage to your skin



#### Use a new site for each injection.

#### Inject into:1

- □ stomach
- ☐ thigh
- upper buttocks

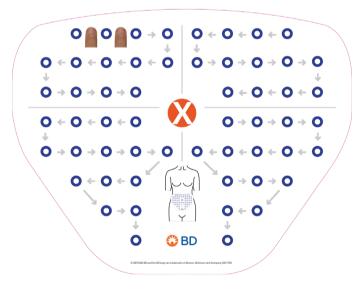
#### Don't inject into:1

× areas with hard lumps and scarring below the skin

Pen Needle is actual size

A new site should be one finger width away from where you last injected.

#### Wait at least 4 weeks before injecting into the same site again.





#### Notes

NACCHO

BD Pen Needles are used to inject diabetes medications. Always read the label and consult your healthcare professional regarding treatment of your diabetes.

^ Very slim adults may need a lifted skin fold at all sites. Children using a 5mm pen needle or longer should be switched to a 4mm pen needle if possible and if not, should always use a lifted skin fold.¹ + BD Ultra-Fine™ 5mm Pen Needles can be used by people with tremors, limited hand strength, or preference for a slightly longer needle length.1

1. Frid AH, Kreugel G, Grassi G. Mayo Clin Proc. September 2016:91(9):1231-1255. 2. Look D, Strauss K. Diabetes Journal 1998;(10): 31-34.

3. Misnikova IV, Dreval AV, Gubkina VA et al. J Diabetology. 2011; 1(1):1-4.

This resource has been reviewed in consultation with the National Aboriginal Community Controlled Health Organisation (NACCHO).

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National Aboriginal Community Controlled Health Organisation

www.naccho.org.au





# Why it's important to use a new needle *every* time you inject

Repeatedly using the same needle to inject your diabetes medication is linked to increased pain and discomfort, skin damage, bruising and/or bleeding.<sup>1,2</sup> Re-using the same needle can cause the needle to bend, break, and/or clog which may prevent you from receiving your full dose of medication.<sup>1,3,4</sup>

#### Needle bending and breaking

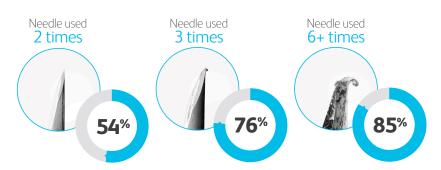
Significant needle tip damage may occur after only one injection.¹ Because damage occurs to such a small area of the needle tip, it cannot be detected without a high powered electron microscope - even when the needle tip has broken off.⁵ Re-using needles increases the risk of needle tips breaking and potentially being embedded in your skin, and you may not be aware of it.¹.⁵

#### What are lipos?

Re-using needles can also cause fatty lumps, known as lipos, to develop below the skin at injection sites.<sup>6</sup>

- These fatty lumps don't absorb your medication in the same way as healthy tissue.<sup>7</sup>
- Lipo can lead to increased blood sugar variability and complications. 6-7

#### What's the risk of developing lipos?<sup>1,7,#</sup>







#### Avoid needle re-use



# Re-using the same pen needle can impact needle sterility, result in dose inaccuracy and other complications.<sup>2</sup>

#### Needle sterility

Needles used multiple times can become contaminated with bacteria and can cause skin inflammation and reactions at injection sites.<sup>2,5</sup>



#### Dose inaccuracy

Leaving a pen needle attached to a pen device, even if the needle is covered, provides an open passageway to the medication cartridge.<sup>5</sup>







#### When carrying a pen device from a warm to a cool environment:

Medication can contract by drawing air into the cartridge through the attached needle. Your next dose may not be accurate, with up to two-thirds of the dose not being delivered.<sup>5</sup>







#### If a pen device is carried from a cool to a warm environment:

Medication can expand and leak though the attached pen needle. This may change the concentration of the medication and the effectiveness of future doses from the cartridge.<sup>5</sup>

Often convenience and a reluctance to throw away something that is not yet 'worn out' or 'finished being used' are reasons why people living with diabetes re-use their needles. This habit wouldn't be convenient or economical if it causes variable blood glucose levels, other complications or even a visit to the hospital to remove a broken needle.

How often are you re-using your pen needles?

#### Always use a new needle

to avoid developing lumps and bumps that can affect how your medication is absorbed. Using a new needle every time you inject can also help minimise pain.<sup>7</sup>







References: 1. Look D, Strauss K. Diabetes Journal 1998; (10): 31-34. 2. Misnikova IV, Dreval AV, Gubkina VA et al. J Diabetology. 2011; 1(1): 1-5. 3. Ginsberg B, et al. Hormone & Metab Res. 1994; 16:584 587. 4. Le Floch JP, et al. Diabetes Care. 1998; 21(9): 1502. 5. BD Data on file. 07D015070015ReuseWP. 2006. 6. Vardar B, Kizilci S. Diabetes Res Clin Pr. 2007; 77:231-236.
7. Blanco M, Hernandez M, Strauss K, Amaya M et al. Diabetes Metab. 2013; 39(5): 445-53.

BD pen needles are used to inject diabetes medication. Always read the label and consult your healthcare professional regarding treatment of your diabetes.

# Based on a study conducted in Spain. Percentages represent the proportion of patients developing lipohypertrophy based on the number of times needles are re-used. "As of June 2021

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