

Giving Insulin in the
'right' way
&
why do DSNs go on
about it all the time?



With the DSN Forum &
Team 101 DSNs:

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Tricky challenges

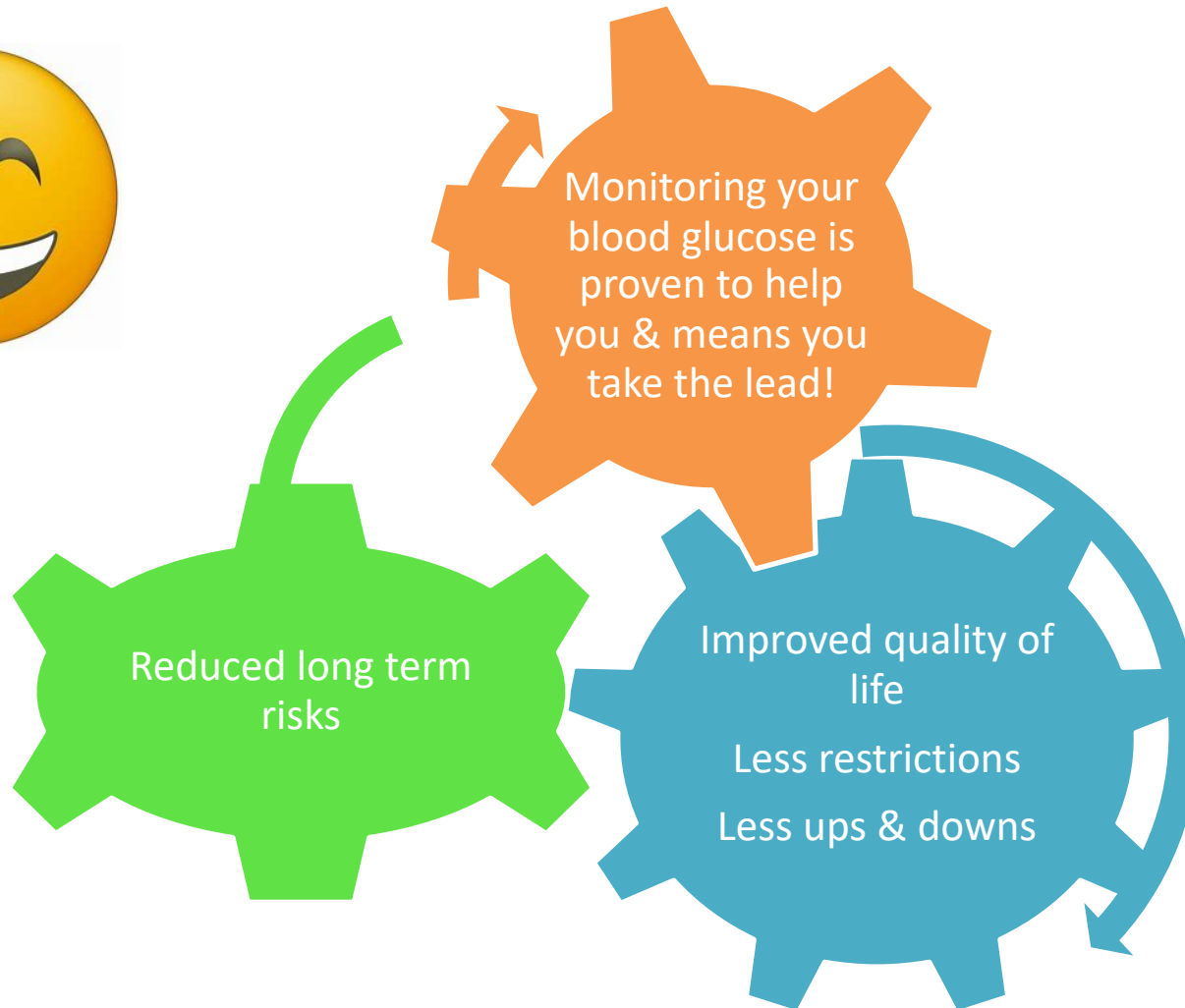
Some of us will worry about of these things & that's entirely normal..

- you may be nervous about needles & hypos
- Feel guilty or to blame for needing insulin
- It messes with your daily life & being spontaneous
- Having to carry your kit around is kind of annoying
- Having to take insulin reminds you of your diabetes and sometimes you just want to forget



All of this is ok, and it sucks, but please talk to us, we can help..

Positives in a good technique



Skin depth

FYI everyone has the same skin depth!

- It`s about 2mm for all of us
- **Everyone** should use 4-5mm needles
- So insulin gets into the tissue under the skin (sub-cutaneous) and not into the muscle
- Injecting into muscle can mean quick or unpredictable absorption = hypos



'good MDI technique'?

- ✓ Use a new needle EVERY time
- ✓ Check the needle is clear with a 2unit air shot
- ✓ Inject at 90 degrees* into a non lumpy site
- ✓ Hold the needle in place for 10 "Mississippi" seconds
- ✓ Dispose of the needle safely into a sharps bin.



Leaving the needle on your pen exposes the insulin to bugs, air bubbles & leakages... yuk!

*unless nurse has advised pinch up

'good pump technique'

- **Pump**

- Motor failure
- Cracks in the case
- 'O' ring leak
- Air in tubing
- Insulin denatured (Rare)
- Insulin crystals in line (Even rarer)
- Occlusion - this can be a kink in the line or cannula site or compression at the cannula site
- Tears or tugs in the line
- Watch out for those little teeth!
Pets and babies

- **Cannula**

- **Sites – anywhere you would inject apart from arms unless using the Omnipod**
- Occlusion partial or complete
- Detachment partial or complete
- Leak along the cannula back to the skin
- Skin reactions
- Not changing cannulas frequently enough
- Lipohypertrophy
- Site infections

- **Cannula**

- There are many different types of cannulas available.
- A change in length of cannula can help with leaks and if they are being tugged out regularly.
- Changing the angle can help especially if you are on the leaner side and find that your cannula comes out easily.
- Changing from Teflon to steel can help with regular kinks or reactions to the Teflon.

- **How often should I change my cannula?**

- This always causes some debate but changing your cannula as recommended can help improve insulin absorption and reduce site infections.

Teflon – on average every 72 hours

Steel – on average every 48 hours

Omnipod - every 72 hours



- **Skin reactions**

Again a bit controversial as the manufactures do not recommend using any products under your pump adhesive however your local Diabetes Team will be able to help you if you are having skin reactions. Simple measures such as skin barrier film or spray can help but sometimes a referral to a Dermatologist is required.

- **Tubing**

Taping a inch of tubing or loop of tubing away from your cannula site can help prevent the cannula being tugged which stops partial or complete pull-outs, loosening and may reduce skin irritations.

- **Annoying unexpected highs?**

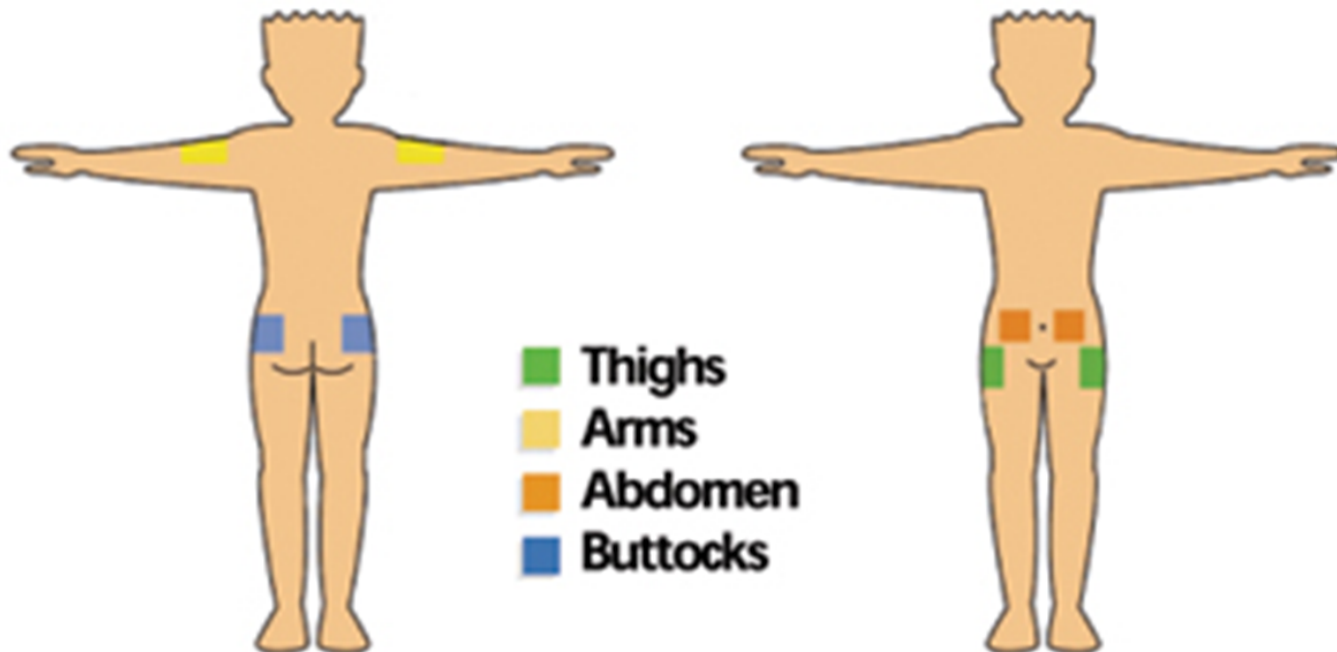
These can be down to cannulas, tubing and pump failure so hopefully some of these tips may help.



Sites you can use...

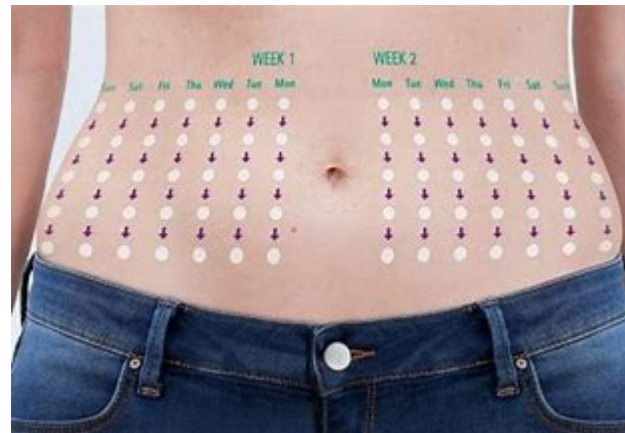
We know you all have a favourite..

- You may like to use a certain site for a specific insulin or time of the day
- You may remember a certain pattern for rotation
- Its all ok & whatever suits you!

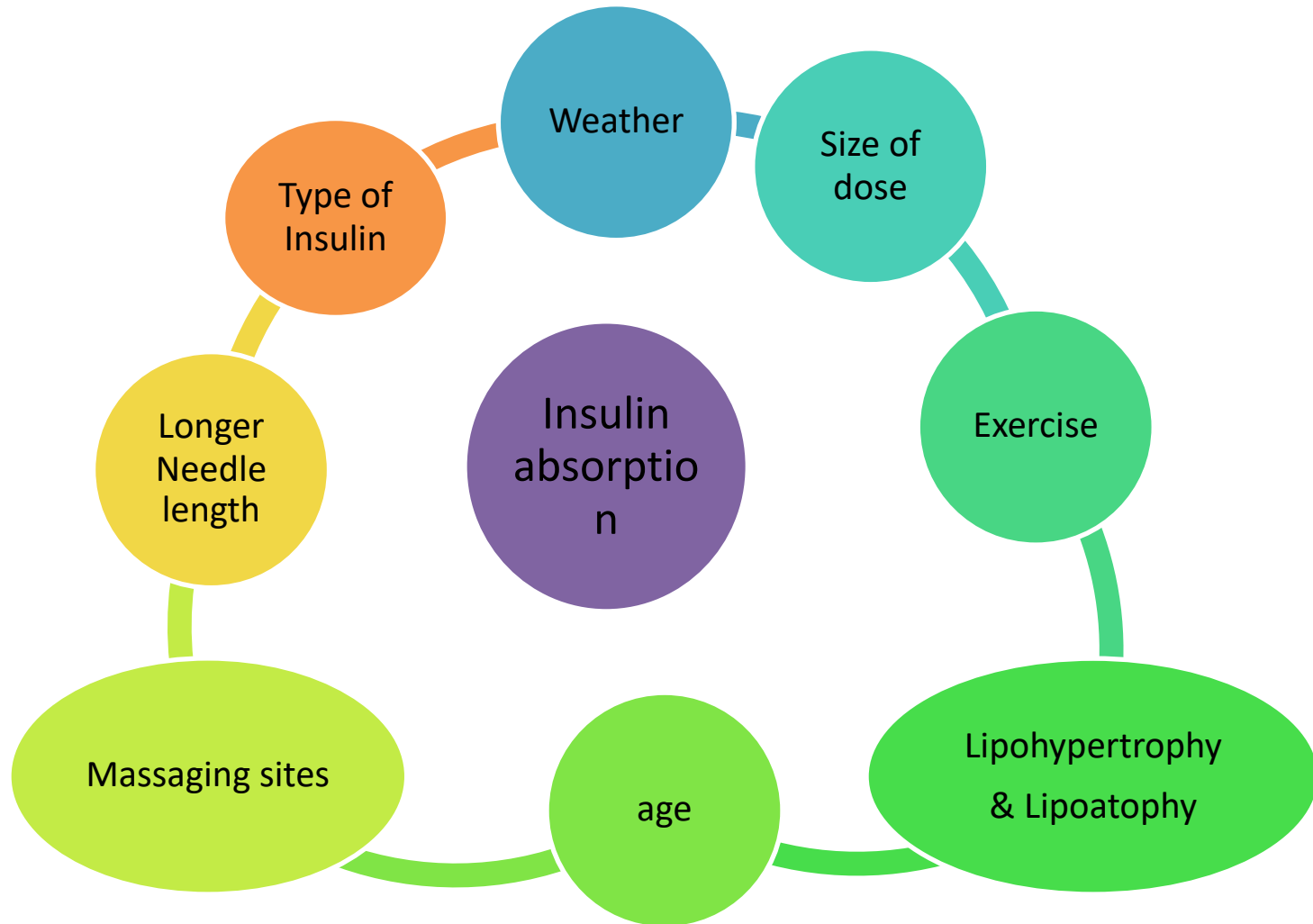


Rotating within injection sites

- Change sides alternating from the right side to the left side (e.g. right thigh one day, left thigh the other day and so on)
- Rotate within sites moving by about a finger's breath from the last injection point



Factors affecting insulin absorption



Lipohypertrophy or “Lipos”

- Lipos occur when we inject over and over into one site; which is easy to do!
- when we inject over and over into the same spot (and worse if we use the same needle) we cause damage to the fat cells
- The damage along with Insulin causes baby fat cells to grow & our fat cells to become abnormal & pulled into our skin layer.
- This causes hard or soft fatty lumps that we can sometimes see at our sites, You may be able to feel these under your skin without seeing them
- They often don't hurt which means we use them more

Why are “lipos” a pain?

- If you inject into lipos the insulin can sit in them & will not be absorbed properly
- The lipo has no real blood supply and so the insulin effect is blunted. The issue with a hypo is if you go to the edge of the lipo where it may have better blood supply
- Injecting into lipos means insulin doses will likely be increased due to poor absorption
- Lipos can trick you into thinking you need more insulin
- Lipos can cause unexplained up & down blood glucose levels

Every body up on your feet!

A great way to check for these is:

- Grab the Lubricant/shower gel for this bit
- Stand up – this is really important!
- Remove or loosen clothing
- Use lube or shower gel and using a flat open palm, have a really good feel around all your sites using your fingertips



If you find a lipo...

- If you can feel any lumps, they can be small or large – mark them with a sharpie and avoid them (see pics)
- Talk to your team for advice as you may need to reduce your insulin doses substantially



..... as its likely your insulin dose will need drastically reducing once using a healthy fresh site to keep you safe!!

Storage of Insulin



All unopened insulin should be stored in a refrigerator between 2-8°C



Open vials, pens & cartridges kept at room temperature for 1 month



Always check expiry dates and avoid extreme temperatures.

Gadgets for help with injecting

You can ask your DSN for help with injecting if you are nervous. There are things we can do to help :

- **Iport** – worn for 3days at a time
- **@TickleFlexUK** – for those who find them painful – can buy for £20
- We can sometimes access specialist therapy and support
- **Frio** – to keep insulin at a happy temp
- **@BDandCo** do injection grids – to help you see where you injected

TOP TIPS!

- Always use a brand new needle!
- Use 4-5 mm needles with fine gauge
- Children or very slim can use a lifted skin fold
- Don't inject straight from the fridge
- If your insulin is cloudy – make sure you mix it
- Consider splitting larger doses
- Rotate your sites every time you inject
- Feel for lipos once a week
- If you find a lipo – use a fresh site but always reduce your insulin to avoid hypos
- Dispose of your needles safely



FAQ's

I have a favourite needle but keep being giving a different one:

You should never have any meds or equipment changed without having a prior discussion. Sometimes the NHS will recommend cheaper brands or versions of needles to reduce costs. However, if you speak to your GP or practice nurse about this, quite often they will understand if you have preferred needle and change it back.

We would rather you were using insulin than not and if its all down to the needle, you just need to tell us!

I am needle phobic and I often don't take my insulin because of this:

Needle phobia is a common issue, and is actually pretty straightforward to treat with psychological therapy. You can ask your GP or your diabetes team to refer you to your local primary care mental health or IAPT service (make sure they mark it as urgent). If you live in Wales, you can ask for a copy of the Talking Type 1 'Not OK with Needles?' book, which is full of techniques that you can use. Important things to remember are 1) it's never as bad as you think it's going to be

2) taking a long time over injecting makes the pain worse

3) distraction can really help – like singing a song or watching TV as you inject.

FAQs

What support can I get for injecting?

- Ask your DSN team for help if you feel you would like support. We can help with offering some gadgets perhaps, or point you in the right direction.

How often should my DSN check my sites?

- They should be checked as often as possible by ANY healthcare professional, as more often than not, its injection sites which causes problems!
- However this is something you can easily do for yourself every day!

Any questions?

- You can always contact the team for basic advice on

@_diabetes101

@DSNForumUK

Please also speak to your local teams for help if you need it!!