



# Samaynta Dareen ee Sonkorowga Farsamada

**Waxaa jira macluumaad badan oo muujinaya in dadka isticmaala tignoolajiyada sonkorowga ay leeyihiin:**

Heerarka dhiigga gulukooska ee ka wanaagsan (HbA1c) oo ka fiican kuwa aan isticmaalin tignoolajiyada sonkorowga.

Heerarka gulukoosta dhiigga ee ka sii wanaagsan (sababtoo ah adeegsiga tignoolajiyada sonkorowga) ayaa awood u siin doonta CYP si aad ugu noolaato nolol caafimaad leh oo ay ku yar tahay dhibaatooyinka sonkorowga sida wadnaha, kelyaha, dhibaatooyinka indhaha iyo cagaha .

Tayo nololeed oo wanaagsan sababtoo ah tignoolajiyada ayaa ka dhawaajin doonta qaylo-dhaan si loo sheego adiga marka heerka sonkorta dhiigaagu uu sareeyo ama hoos u dhaco si aad u joojin karto inay dhacdo.

Waxaad heli doontaa hurdo fiican habeenkii sababtoo ah qalabyo badan oo tignoolaji ah ayaa leh alaarmiga dhawaaqa haddii ay dhibaato jirto



## Introduction

The use of technology to support the management of diabetes has increased a lot over the past few years. Technology is widely available and is used as standard practice to manage diabetes in children and young people.

This guide is to introduce diabetes technology to those living with diabetes. You will learn about the different types of technology, what they are used for and what benefits they have. Discuss with your healthcare team what type of technology you would like to use to support the management of your child's diabetes.

## Nuxurka

### Farsamada

#### Kormeerka gulukoos

- Nidaamyada la socodka gulukoosta
- Nidaamyada joogtada la socodka gulukoosta
- Faa'iidooyinka isticmaalka tignoolajiyada ee la socodka gulukoosta

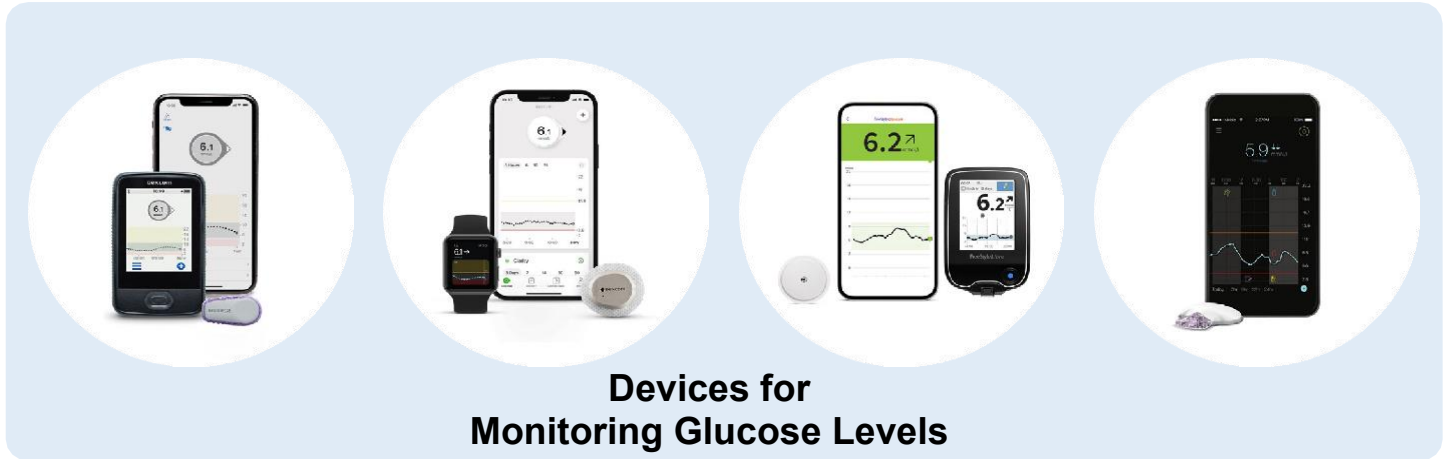
#### Bixinta insulin

- Insulin bambooyin
- Faa'iidooyinka isticmaalka tignoolajiyada ee gudbinta insulin

#### Kormeerka gulukoos iyo gaarsiin insulin

- Sidee qalabka sii wada jir ah shaqayn karaa

## Sii socota Gulukoos Kormeerayaal



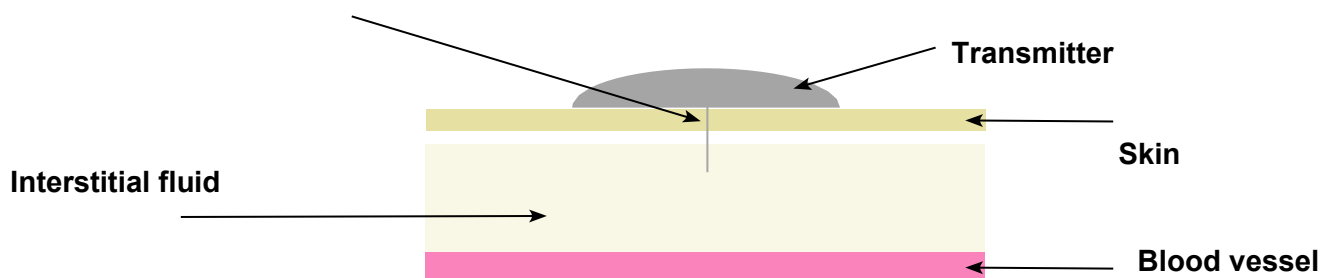
**Habka soo jireenka ah ee loo isticmaalo in lagula socdo heerarka gulukoosta waa in la isticmaalo qalab far ka muda leh a dhiig gulukoos mitir iyo a xariijimo, wax sidan oo kale ah.**



Xitaa haddii lagu siiyo ama aad doorato inaad isticmaasho mid ka mid ah noocyada cusub ee tignoolajiyada si aad ula socoto heerarka gulukoosta, wali waxaa lagu siin doonaa wax sidan oo kale ah. Waa muhiim in tan loo haysto sidii 'dib-u-celin' haddii ay dhacdo in tignoolajiyada ay ku guuldareysato, aad dareento caafimaad darro ama haddii aad rabto inaad sameyso baaritaan dheeraad ah.

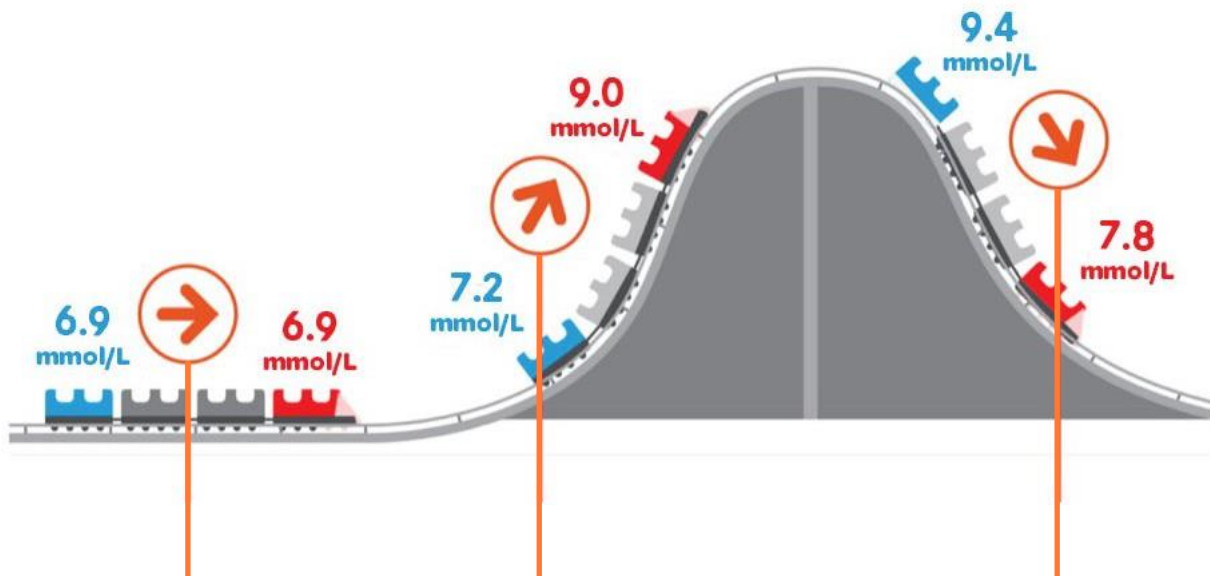
Unlike the finger pricker above, the newer technologies do not use a blood sample to give a glucose level, instead they use a small filament which is as thin as a hair, attached to a sensor which takes the glucose reading from the interstitial fluid just below the skin.

**Filament/Sensor (thin as a hair)**



Sida dareemayaasha isticmaala interstitial dareere si loo siiyo akhrinta gulukooska, akhrintu waxay u badan tahay in uu ka duwanaado a dhiiga gulukooska akhriska. Farqiga u dhexeeya waxaa loo yaqaan 'lag time' oo badanaa wuxuu ka hooseeyaa 5 daqiiqo.

Hadii heerarka gulukooskaagu si degdeg ah ayay hoos ugu dhacayaan, akhriska gulukoosta dhiiggaagu waxa laga yaabaa inuu marka hore ka hooseeyo dareenka akhriska. Haddii heerka gulukoostaagu uu si degdeg ah u kordho qiimaha gulukooska dhiiggu waxa laga yaabaa inuu ka sarreeyo akhriska dareemayaasha laakiin markaa akhriska dareemayaasha ayaa ka sarre mari doona qiimaha gulukoosta dhiiggaaga.



**Marka heerka gulukooska uu xasilo ah** dareeme akhrinta iyo akhrinta gulukooska dhiigga waa isku mid.

**Marka heerka gulukooska uu kor u kaco** , akhrinta dareemayaasha ayaa laga yaabaa inay ka hooseeyaan akhrinta gulukooska dhiigga.

**Marka heerka gulukooska uu hoos u dhacayo** , akhrinta dareemayaasha ayaa laga yaabaa inay ka sarreeyaan akhrinta gulukooska dhiigga.

The red train represents the blood glucose reading and the blue train represents the sensor reading.



Waxaa jira laba nooc oo kala duwan oo qalab ah oo loo isticmaalo si loola socdo gulukoosta, **hababka la socodka gulukoosta joogtada ah (CGM)** iyo **kala go'a gulukoos la socodka nidaamyada (ICGM)** sidoo kale loo yaqaan sida 'Flash' .

## Sii socota Gulukoos Kormeerka Nidaamyada - CGM-yada

Dareem yar akhriya ah gulukoos heerka in dareere interstitial iyo isla markiiba diraa ah xogta gacanta lagu hayo, mashiin yar oo jeebka lagu qadan qaro ama a telefoonka gacanta oo la daawan karo wakhti kasta.

Fallaaro ayaa sidoo kale kuu sheegi doona haddii heerarka gulukoosku ay joogto, marka ay kor u socdaan ama ay hoos u socdaan. Waxaa jira xulashooyin lagu dejinayo alaarmiga heerar sare iyo/ama hoose iyo siyaabo badan oo kala duwan oo aad ku arki karto heerarka gulukoosta adiga oo isticmaalaya warbixinnada oo la wadaagto kooxdaada daryeelka caafimaadka. Waalidiinta iyo daryeelayaashu waxay sidoo kale arki karaan akhrinta gulukooska waxayna ku dhejin karaan alaarmiga qalabkooda.

**Kuwani waa tusaalooyin ka mid ah sida ay u eg yihiin kormeerayaasha gulukoosta ee joogtada ah:**



**Kormeerayaasha gulukooska ee joogtada ah waxay badanaa ka kooban yihiin saddex qaybood:**

### 1. Qalab lagu geliyo dareenka



**2. Dareemka iyo gudbiyaha** - dareemaha wuxuu u baahan yahay isbeddel 7-10 maalmood kasta iyo nolosha gudbiyaha way ku kala duwan tahay aalado kala duwan



**3. The akhriste (ama telefoonka)** - si loo helo heerka gulukooska



## Kormeerka Joogta ah Sii socota Gulukoos - iCGM ama Flash

Dareem yar ayaa akhriya heerka gulukooska ee dareeraha interstitial iyo marka lagu sawiro akhristahaaga ama taleefankaaga waxay tusi doontaa heerka gulukoostaada hadda. Fallaaro si ay u muujiyaan haddii heerarkaagu yihiin kuwo joogta ah, kor u kacaya, ama hoos u dhacaya iyo xogta 8dii saacadood ee hore ayaa la muujiyay. Ogeysiisyada waxaa loo dejin karaa akhris sare iyo mid hoose.



iCGM leeyihiin gelin qalab, dareeme iyo gudbiye iyo a akhriste (ama telefoonka) kaliya sida CGM-yada

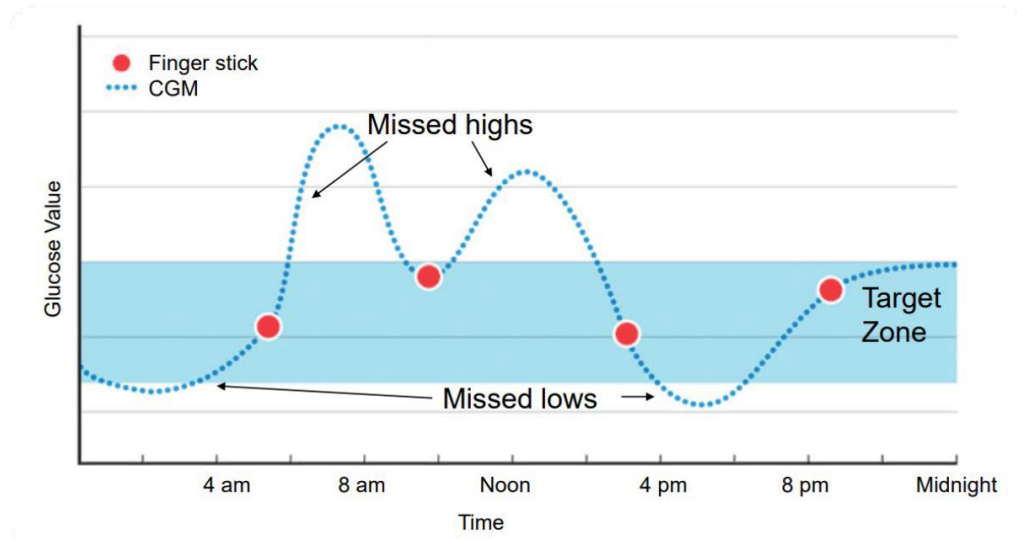
Farqiga ugu weyn ee u dhexeeya CGM iyo iCGM waa in marka la isticmaalayo CGM aad ku arki karto heerarka gulukooska wakhti kasta akhristaha ama telefoonka, adigoon waxna samaynin. Iyada oo la adeegsanayo iCGM iskaanka dareeraha iyadoo la isticmaalayo akhriste ama taleefan ayaa loo baahan yahay si loo awoodo inuu arko heerarkaaga. Waa inaad keentaa qalab talefan ku habboon haddii aad rabto inaad telefoon u isticmaasho la socodka heerarka gulukooska.

## Faa'iidooyinka ugu muhiimsan ee Sii socota iyo Joogta ah Nidaamyada Kormeerka Gulukoosta

### 1. Ogow waxa ku dhacaya heerarka gulukooskaaga mar kasta

Fiiri shaxda hoos:

- Xarunta buluuga ah ee garaafku waxay tusinaysaa meesha la beegsanayo ee heerarka gulukoosta
- Dhibcaha gaduudan waxay muujinayaan 4 hubin oo gulukoos ah iyadoo la isticmaalayo far la muday
- Xariiqda dhibcaha buluuga ah waxay muujinaysaa waxaad aragto adoo isticmaalaya CGM-yada ama iCGM-yada



**Marka aad isticmaalaysa oo kaliya far duritaanka si aad u hubiso heerarka gulukooska, waxa kaliya oo aad arkaysaa waxa dhacaya wakhtigaas, ma arki kartid waxa socda wakhtiga intiisa kale.**

**Markaad isticmaasho CGM-yada ama iCGM-yada, waxaad arki kartaa waxa dhacaya mar walba mana seegi doono kuwa sare iyo kuwa hooseba.**

## 2. Niyada maskaxda ee waalidka iyo daryeelayaasha

Heerarka gulukooska ee ilmaha ama qofka da'da yar ayaa lala wadaagi karaa waalidiinta iyo daryeelayaasha iyaga oo isticmaalaya qalabkooda (waxay kuxirantahay qalabka loo isticmaalo), iyadoo siinaya nafis maskaxeed in sare iyo hoosba aan la seegi doonin

## 3. Faro-ku-dhufasho yar

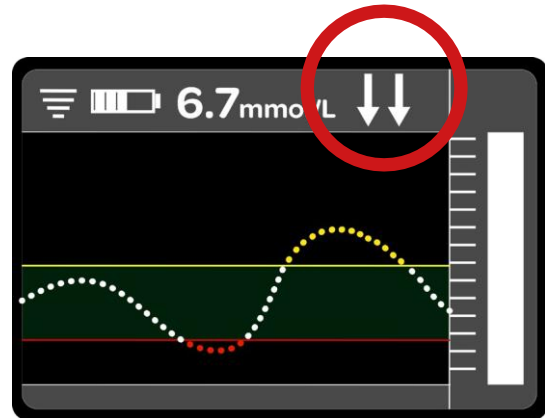
Jeegareynta faraha maalinlaha ah ee joogtada ah loogama baahna CGM-yada iyo iCGM-yada, jeegareynta faraha ayaa kaliya u baahan doona in la sameeyo si loo hubiyo in akhrinta dareemayaasha ay la mid tahay calaamadaha gulukooska sare ama hooseeya. Halkii ay ka ahaan lahayd dhibka iyo xanuunka fara-ku-dhufashada caadiga ah, dareemayaasha waa inay kaliya u baahan yihiin beddelka 7-14 maalmood kasta.

## 4. Ogow halka heerarka gulukooska u socdo

Falaaraha ku yaal akhristaha ama taleefanka ayaa ku ogeysiin doona halka heerarka gulukooska u socdo, tani waxay kaa caawin doontaa inaad go'aanno ka gaarto hagaajinta insulinta ee laga yaabo in loo baahdo.



Haddii aad aragto lambarkan maxaad samayn lahayd?



Haddii aad taas beddelkeeda arki lahayd, ma samayn lahayd wax ka duwan

## 5. Eeg qaababka iyo isbeddellada

Waxaad awoodi doontaa inaad aragto sida waxyaabaha kala duwan sida cuntada, dhaqdhaqaaqa, cimilada, ama walbahaarka ay dhammaan u saameeyaan heerarka gulukooska oo aad barato sida loogu maareeyo hagaajinta insulinta.



## Insulin Bambooyin



## Qalabka waayo Bixinta Insulin

Habka soo jireenka ah ee keenista insuliinka waa in insuliin shaqaynaysa muddo dheer (basal) iyo mid gaaban (bolus) la geliyo lakabka baruurta (sub-cutaneous) ee maqaarka hoostiisa, iyadoo la isticmaalayo irbad yar oo ku dheggan qalin insulin, sida tan:



Bambooyinka Insulintu waa aaladaha loogu talagalay in lagu keeno insulinta iyada oo aan loo baahnayn in la isku duro. Waxay jireen ilaa 1978-kii laakiin waxay ka soo saareen qalab aad u waaweyn ilaa qalab aad u yaryar, kuwan oo kale ah.



## Sidee buu u shaqeeya bamka Insulin

### 1. Basal Insulin (mararka qaar loo yaqaan sida asalka insulin)

Insuliinka Basal waa insulinta si joogto ah u socota maalinta oo dhan waxaana lagu keenaa dhaqan ahaan iyadoo lagu duro insulin muddo dheer shaqaynaysa hal ama laba jeer maalintii taasoo shaqaynaysa 12-24 saacadood.

Markaad haysato bamka, halkii aad ka isticmaali lahayd insulin-ta shaqaynaysa basal-ka, bamka waxa loo habayn doonaa inuu keeno xaddi yar oo insulin ah oo dhaqsaha badan si joogto ah maalintii oo dhan. Insuliinka asalka ah waa la isku hagaajin karaa si loo keeno xaddi kala duwan oo insulin ah waqtiyo kala duwan oo maalintii ah iyo marka la samaynayo jimicsi.

Sababtoo ah ma jiro insuliin shaqaynaysa oo wakhti dheer shaqaynaysa oo ka shaqaynaysa gadaasha, waa inaad had iyo jeer ku xidhnaataa bamka insulintaada. Si kastaba ha ahaatee, matoorada qaar ayaa laga yaabaa inay u baahdaan in la gooyo

1. Qubeyska
2. Dabaasha
3. Ciyaaraha

Haddii aad go'do wakhti dheer (in ka badan 2 saacadood), heerarka gulukooska ee sarreeya iyo ketones ayaa kobci kara.

### 2. Bolus Insulin

Insuliinka Bolus waa qiyaas insulin ah oo si degdeg ah u shaqeysa oo la siin karo cunto ama cunto fudud iyo sixitaannada gulukooska marka heerarka gulukooska ay ka sarreeyaan heerka la beegsanayo.

Halkii aad ku duri lahayd insulinta dhaqsaha badan u shaqeysa qalinkaaga, bamka ayaa xisaabin doona qiyaasta saxda ah ee insulinta loo baahan yahay, iyadoo lagu saleynayo garaamyada karbohaydrayt ee la cunay iyo kaaga qiimaha gulukooska. Waa inaad gashaa garaamyada karbohaydrayt ee bamka ama taleefanka gacanta, waxaana sidoo kale laga yaabaa inaad gasho qiimaha gulukooska.

## Noocyada ee Bambooyin

Waxaa jira laba nooc oo ah bambooyinka insulin:

- 1) Tuubbad/ku xidhan bambooyin
- 2) Tubbo la'aan/patch bambooyin ama pods

### Tuubada/la xidhxidhay bambooyin

Bamka tuubada leh ama ku xidhan, insuliinka waxa laga keenaa qalab yar oo bamka oo aad ku haysan karto jeebkaaga, ama boorsada bamka (fiiri sawirada hoose).

Insuliinku wuxuu dhex maraa tuubo dhuuban oo gala cannula kaas oo fadhiya maqaarka hoostiisa.



Soo gaarsiinta insulinta waxaa lagu kontaroolaa iyadoo la isticmaalayo badhamada aaladda yar yar waana in cannula la bedelaa 2-3 maalmoodba mar.

Bamka tuubada/isku xidhku wuxuu ka koobnaan doonaa saddex qaybood oo waaweyn:

1.

Cannula insertion device



2.

Cannula and tube



3.

The pump (holds the insulin and controls the insulin delivery).



## Tubo-la'aan/Patch Bambooyin iyo Pods

Bamka tuubada-la'aanta/ balastarka ama boodhka, insulinta waxaa lagu hayaa meel yar oo ku xiran cannula iyo ku lifaaqan ku ah maqaarka. The insulin gaarsiin waa la xakameeyey isticmaalaya a gacanta lagu haysto qalab kaas oo ku xidha boodhka isagoo isticmaalaya Bluetooth. Booska wuxuu u baahan yahay in la beddelo mid kasta 2-3 maalmood.

**Bamamka tuubbada-la'aanta/ balastada ama boodhka wuxuu ka kooban yahay laba qaybood oo waaweyn:**

1. Bamka tuubada-la'aanta/ balastar (waxay haysaa insulinta)
2. Qalabka gacanta (wuxuu xakameeyaa gaarsiinta insulinta)

**Bamka tuubada-la'aanta ah ama balastarka ayaa ku sii jiri kara goobta isboortiga, dabaasha, iyo qubeyska.**



## Faa'iidooyinka Muhiimka ah ee Bambooyinka Insulin

### **Duritaan la'aan**

Uma baahnid inaad isku durto insulinta basal-kaaga hal mar maalintii iyo insuliinkaaga bolus mar kasta oo aad wax cunto. Taa beddelkeeda, waxaad u baahan doontaa oo kaliya inaad geliso cannula bamkaaga qiyaastii 3dii maalmoodba mar.

### **Tayada ee nolosha**

Xidhashada bamka insulinku waxay ku siinaysaa dabacsanaan badan oo ku saabsan hawl maalmeedkaaga, waxaad cuni kartaa markasta oo aad si fudud u siiso insulin.

### **.Dabacsanaata la gabsiga**

Qadarka insulinta aad keenayso si fudud ayaa loo hagaajin karaa iyadoo la isticmaalayo kontaroolada bamka si aad wax uga beddesho iyadoo ku xidhan nooca cuntada aad cunayso iyo sida aad u firfircoon tahay. Bamka wax badan ayuu keeni karaa qaddarka saxda ah ee insulinta marka loo eego cirbadaha qalinka, oo ay ku jiraan qiyaaso aad u yar.

### **Sii fiican u koontaroolada sonkorowgaaga**

Dhammaan faa'iidooyinka kor ku xusan waxay ka dhigan yihiin haddii aad isticmaasho bamka insulinta, si fiican waxaad si fiican u xakameyn kartaa sonkorowgaaga si caafimaadkaaga muddada-gaaban iyo midka fog uu u fiicnaado.



## Isku-dhafan loop xiran

### Qalabka in wada shaqayn si loo hubiyo heerarka gulukooska iyo bixinta Insuliin (Hybrid Closed Loops)



Wareegga xiran ee isku-dhafka ah (HCL) waa nidaam ka kooban mid ka mid ah matoorada oo la shaqeynaya mid ka mid ah CGM-yada.

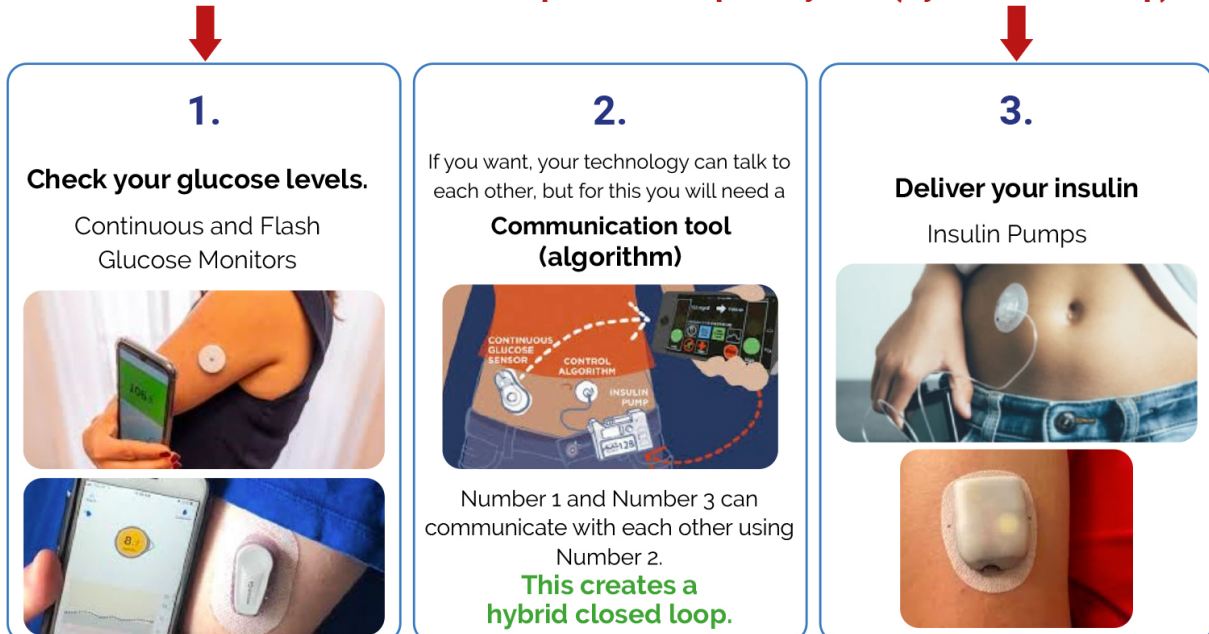
Insuliinka waxaa lagu keenaa iyadoo la isticmaalayo bamka waxaana lagu xakameynayaa macluumaadka heerka gulukooska ee laga soo diro CGM.

An algorithm waa sida ah maskaxda, la xiriirid u dhexeeya ah bamka iyo ah CGM iyo waa furaha in la sameeyo nidaamka shaqayn Algorithm waa midkood qabtay gudaha bamka ama abka telefoonka

Insuliinka Basal (ka soo jeeda) si toos ah ayaa loo hagaajiyaa si ilmahaagu u kala duwanaado, laakiin garaamyada karbohaydrayt ee cuntada ayaa weli u baahan in la geliyo insulinta bolus.

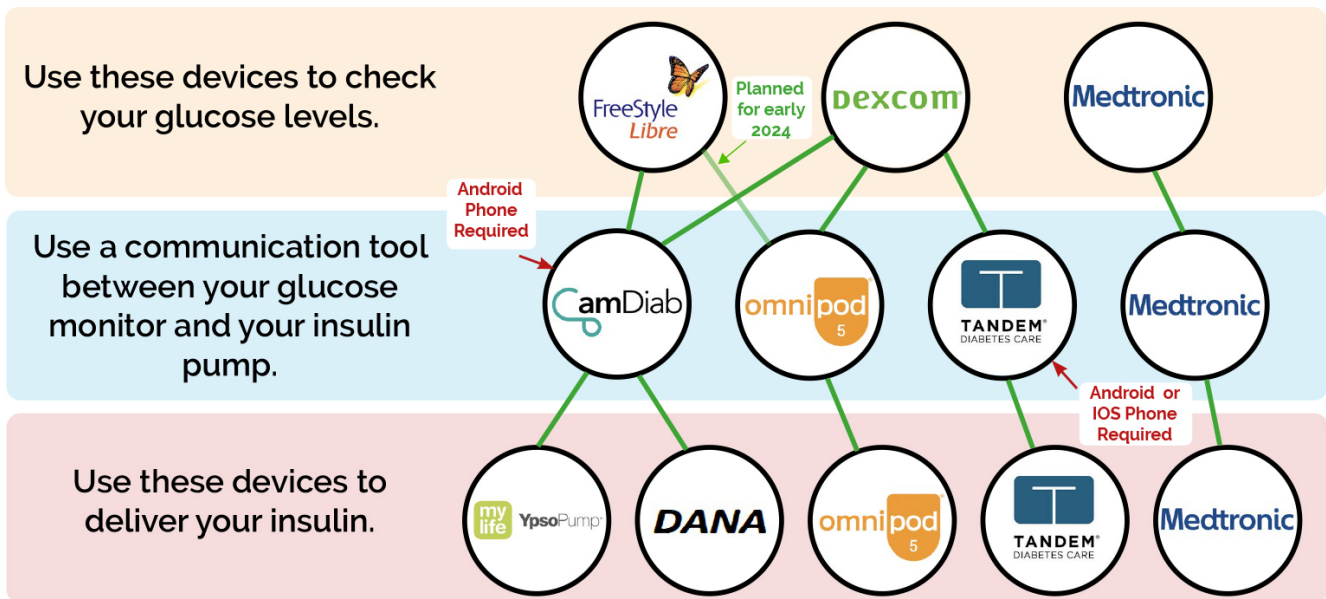
**Dhammaan bambooyinka iyo CGM-yadu ma wada shaqeeyaan, sawirkani wuxuu muujinayaa fursadaha jira.**

**These can be used on their own or as part of a complete system (Hybrid Closed Loop)**



## Qalabka \_

Dhammaan bambooyinka iyo CGM-yadu ma wada shaqeeyaan, sawirkani wuxuu muujinayaa fursadaha jira.



## Faa'iidooyinka Muhiimka ah ee Isku-dhafan Loop xiran

Sida lagu tilmaamay sare, a isku-dhafan xiran loop nidaamka waa ah isku darka ee a CGM iyo ah Bamka insulinta wada shaqayn. Faa'iidooyinka isticmaalka nidaamka loop xiran ee isku-dhafka ah ayaa markaa isku dhafan faa'iidooyinka iyadoo la isticmaalayo CGM iyo bamka Insulin.

### Soo koobid ee faa'iidooyinka

#### In ka yar duullaan

Uma baahnid inaad farta ku durid si aad u hesho akhriska gulukooska ama lagugu duro si aad u bixiso insulintaada.

Taa baddalkeeda, waxaad xiran doontaa dareemaha u baahan isbeddelka dhowr jeer bishiiba iyo bamka insulinta ee u baahan cannula ayaa isbeddelay dhowrkii maalmoodba mar.

#### Faragelin xaddidan ayaa looga baahan yahay bukaanka

Markaad barato sida loo isticmaalo nidaamka loop-ga isku-dhafan ee aad dooratay, waxa kaliya oo aad u baahan tahay inaad samayso waa:

- Beddel dareemayaashaada iyo cannulas sida loogu baahdo adiga oo isticmaalaya goobo cusub oo maqaarka ah.
- Geli garaamyada karbohaydrayt ka hor gaarsiin bolus insulin.
- Hubi inaad si joogto ah dib ugu eegto gulukoosta iyo xogtaada insulinta.

#### Natiijooyinka la haaajiyay

Adiga doono u baahan in la aamino kaaga la doortay nidaamka loop-xidhan isku-dhafan oo oggolow waa ku la shaqee inaad maareyso kaaga sonkorowga. Mar waad aamini kartaa iyo shaqayn leh adiga ogaan doonaa ...

- In ka yar hypos

- In ka yar hypers

Waqti dheerad ah oo ku jira xadka bartilmaameedka gulukooska

- Wanagsan HbA1c

- Tayada nolosha oo la hagaajiyay

Khatar yar oo ah xaaladaha caafimaad ee mudda dheer

- Tayada hurdada oo wanagsan

## Farsamada Sonkorowga Waxyaalaha qaar in laga fikiro

Qalabkaagu had iyo jeer waa kugu dheggan yihiin( marka laga reebo loo baahan yahay in laga saaro qubeyska ama ciyaaraha)

Kaliya ma dhigi kartid "deji oo ilow" - sidoooyin isku dhafan ayaa wali kaaga baahan inaad la socoto waxa ku dhacaya heerarka gulukooska oo aad sameyso wax kasta u baahan in wax laga beddelo dhalidda insulinta. Waa inaad weli gelisaa garaam oo karbohaydrayt ah dhammaan cuntooyinka iyo cuntooyinka fudud.

Waxa jira wax badan oo la baran karo bilowga - maaha xal habeen kaliya ah!  
Waxaad u baahan doontaa inaad barato xirfado cusub oo aad waqti siiso si aad u fahamto qalabka aad dooratay.

Wali waa inaad mararka qaarkood hubisaa heerarka gulukooska adiga oo isticmaalaya farta laga muday, marka shidmahu uu hoos u akhriyo ama calaamaduhu aanay ku habboonayn akhrintaada.

Weli waxaad u baahan doontaa inaad isku durto insulintaada haddii bamka insulintaadu xumaado ama mararka qaarkood marka aad u baahan tahay inaad hoos u dhigto heerarka gulukooska markaad jiran tahay ama aad u kacsan tahay.

Kooxdaada daryeelka caafimaadku waxay ku siin doonaan taageero iyo hagitaan ku saabsan doorashada qalabka sonkorowga kugu habboon waxayna hubin doonaan inaad si buuxda ugu kalsoon tahay isticmaalkooda. Iyaga doono la socodka iyo taageero adiga oo dhan safarkaaga sonkorowga markaad ilmo/yar tahay.

