AIDMICS
BIOTECHNOLOGY

iSperm

User Manual

Version 6.0

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01
Hardware

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Specifications

/HYK^HY-L

6W[PJHS THNUPÄJH[PVU! LX\P]HSLU[[V _ P
6W[PJHS YLZVS\[PVU! dT
/LH[LY! — u
>LPNO[! N L_JS\KPUN [OL (WWSL P7HK TPU
7V^LY HUK IH[[LY`! 39 _ \W [V OV\YZ

6. Color: black.
7. Camera specs for iPad mini6.

[47 WOV[VZ[W -WZ -\SS /+ YLJVYKPUN

Software

Range of Analysis:
1. Concentration:

2. Motility :
0%-100% for any concentration VW[PTPaLK H[TPSSP

3. Progressive motility:
IL[^LLU JVUJLU[YH[PVU TPSSPVU
VW[PTPaLK H[TPSSPVU TS

Analysis Time: Concentration & Motility <20sec;
Progressive Motility ~30sec.

Semen Sample

1. Fresh semen:
[+PYLJ[TLHZ\YLTLU[VM YH^ ZLTLU MVY X\P
*[SLHY 7\LY_[ËUKLY H[u MVY KPS\[LK ZLT
;OH^LK ZLTLU!
*[SLHY 7\LY_[ËUKLY H[u MVY MYVaLU [OH

. iSperm Briefcase
/ Sample Collector
0 Heater and Heater Cable
1 Hex Wrench
2 Sample Chips (Base & Cover)
3 Droppers
4 User Manual
5 Serial Number Card
6 iPad mini and iPad mini Case
7 Measuring Cups
LR44 Batteries
iPad Stand
(P Y) S V ^ L Y
Bag Strap

Sampling Chips

;LZ[Z WLY IV_

:LHYJO ¸P:WLYT ¹ VU (WW :[VYL HUK KV^US
^OPJO ULLKZ [V HUHS`ZPZ

iSperm Equine 6

iSperm Swine 6

iSperm Bovine 6

iSperm Caprine 6

iSperm Canine 6

iSperm Ovine 6

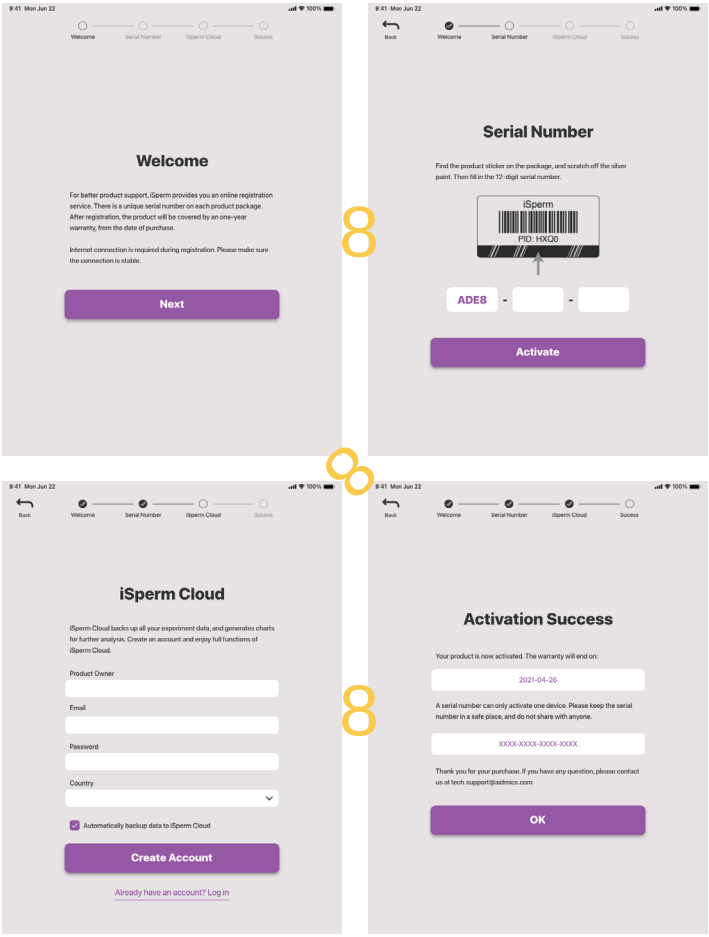
iSperm Murine 6

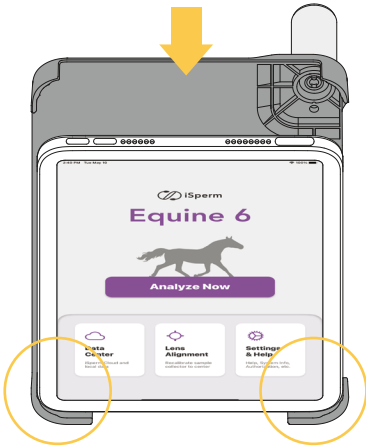
iSperm Poultry 6

iSperm Cervine 6

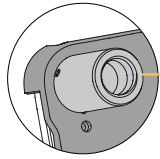
Install iSperm App – 2/2

6 W L U P : W L Y T (W W - V S S V T [O h e s e r i a l n u m b e r/ provided in the Serial Number Card and **CREATE A NEW ACCOUNT or LOG IN** for iSperm Cloud





Insert the bottom corners into the case.

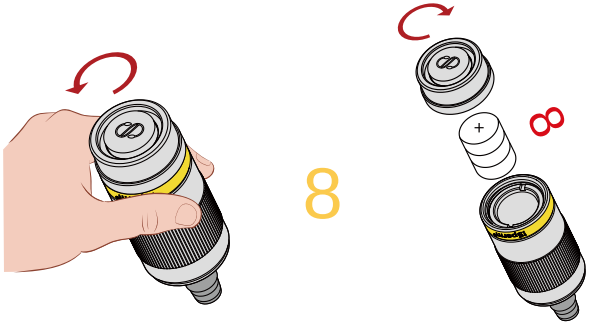


Optical Lens

Then press the top corners ^OLYL 3,5: PZ SVJH[LK iPad into the case.

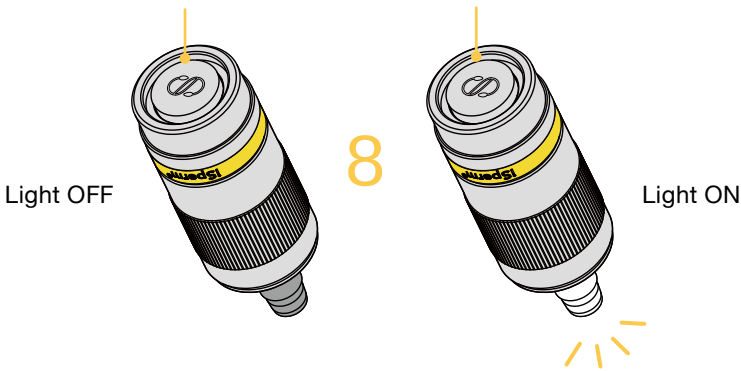
9L]LYZL [OL VYKLY ^OLU YLTV]PUN [OL JHZ ;OPZ WYL]LU[Z [OL JHZL MYVT ILPUN IYVRL

Use of Sample Collector



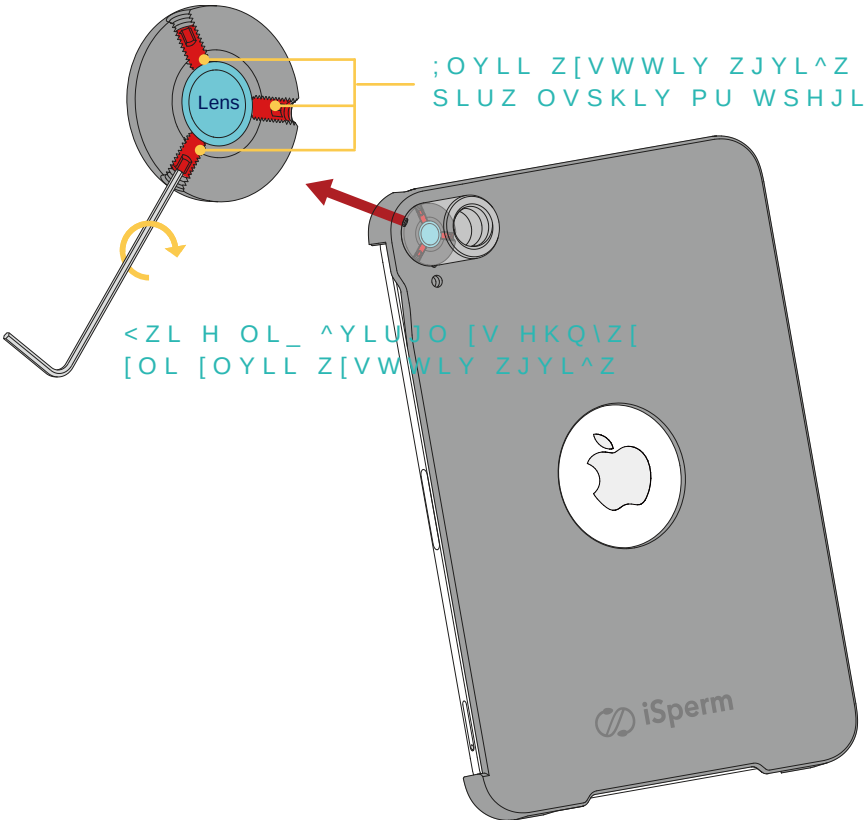
7YLZZ [OL ZPS]LY YPUN HUK ZJYL^ [OL LUK JHW
PUZLY[[OYLL UL^ 39 the IH[[LYKPLZ ^PIHJYL^ \W
IHJR [OL LUK JHW JSVJR^PZL

79,:: [V [\YU 65 6-- [OL SPNO[

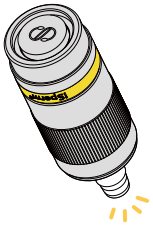


0M `V\ ZLL [OL SPNO[ÅHZOPUN PUZ[LHK VM
[OL IH[[LYPLZ

Adjustment 3-axis lens holders to align the lens for accurate measurements.



Lens Alignment – 2/4

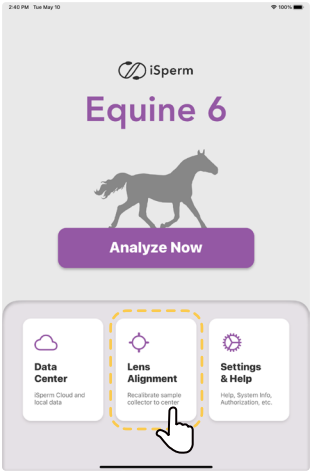


8

8

Turn on the light of the Sample Collector.

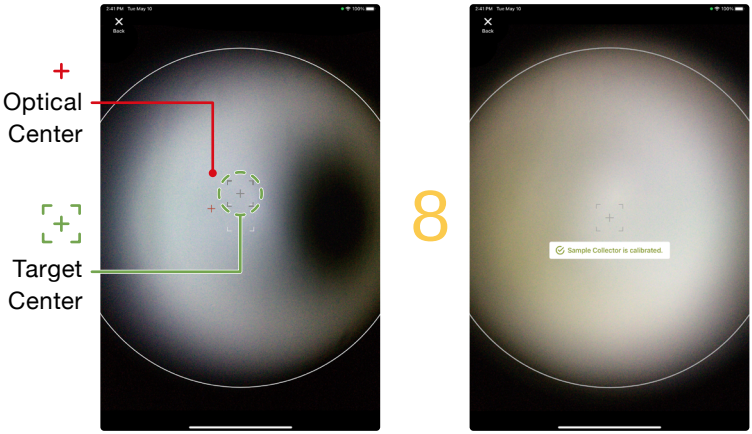
:JYL^ [OL :HTWSL *VSSL into the optical lens.



Open the iSperm App and tap “Lens Alignment.”

<ZLYZ HYL Z\NNLZ[LK [V L_LJ\[L JHSPIYH[PV

+LJLU[LYLK SLUZ *HSPIYH[LK



Adjust the Optical Center + to the Target Center [+].

“Sample Collector is calibrated” ZOV^Z \W ^OLU [OL 6W[P
Center overlaps the Target Center

Decentered Lens Detected

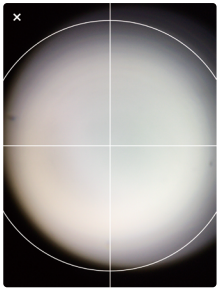
Decentered lens can lead to inaccurate analysis. Please adjust the lens to the center immediately.

Ignore | Adjust Now

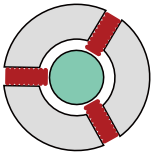
6UJL LU[LYPUN [OL HUHS`aPUN TVKL [
^PSS JH\ZL H ^HYUPUN TLZZHNL

Lens Alignment – 4/4

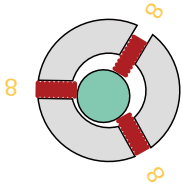
CAUTION: Use hex wrench gently



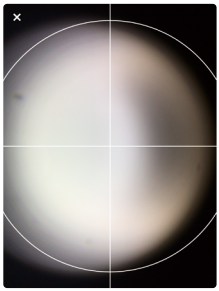
Adjustment example 1:



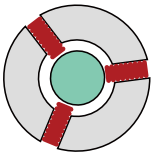
Original



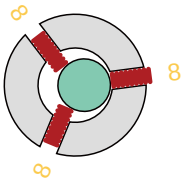
Alignment approach



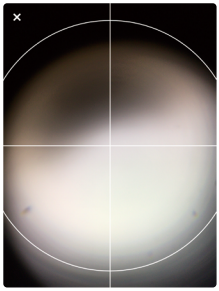
Adjustment example 2:



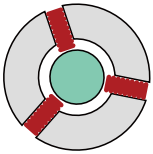
Original



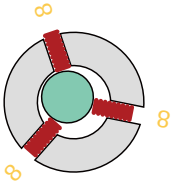
Alignment approach



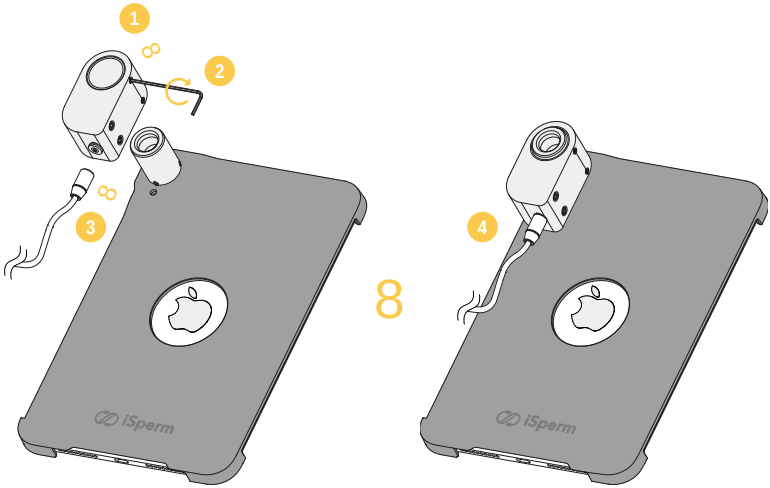
Adjustment example 3:



Original



Alignment approach



0UZ[HSS [OL /LH[LY ^P[O [OL VW[PJHS SLUZ
<ZL H OL_ ^YLUJO [V MHZ[LU [OL OLH[LY
*VUULJ[[OL WV^LY JHISL [V [OL OLH[LY
*VUULJ[[OL WV^LY JHISL [V H WS\N VY H WV

;OL 3,+ PUKPJH[VY ^PSS
VUJL [OL OLH[LY PZ JVU
WV^LY >OLU [OL 3,+ Z[H
this means that the temperature has
YLHJOLK — ä

Latex Beads Test – 1/4

3H[L_)LHKZ ;LZ[OLSWZ \ZLYZ [V VI[HPU TVYL HJ
[OLPY P:WLYT 0[^PSS OLSW [V

. Check if the sampling process is correctly performed.
. *VUÄYT PM HU HIUVYTHS OHYK^HYL WYVISLT ZH
encounters.

For more information about latex beads, please refer to
O[[WZ! ^^^ OHTPS[VU[OVYUL beads PUKL_ WOW

7YLWHYH[PVU MVY 3H[L_)LHKZ ;LZ[

1. -HTPSPHYPaL `V\YZLSM
“Sampling > Pipette Method” in this
THU\HS [V WYVJLLK ^P[O [OL [LZ[
2. The YLJVTTLUKLK JVUJL[YH[PVU
interval for the latex beads solution
[V IL WYLWHYLK PZ [V 4TS
HUK [OL ZPaL PZ dT
3. 4TS PZ [OL KLHS JVUJL[YH[PVU
for the test.
(Refer to the picture on the right.)

Calibration by Chamber Type		
	For Fixed Coverslip	For Hemocytometer
#1	35 ± 5 M/ml	46 ± 7 M/ml
#2	18 ± 2.5 M/ml	23 ± 4 M/ml
#3	3 ± 1 M/ml	4 ± 1.5 M/ml

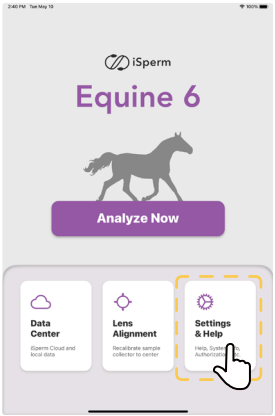
9LTPUK!
Refer to the numbers shown on
the column “For Hemocytometer”
[V KV [OL JVTWHYPZPVU

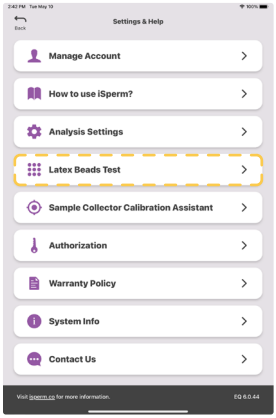
0UZ[Y\J[PVUZ MVY 3H[L_)LHKZ ;LZ[

1. 4HRL H ZHTWSL HUK JV\U[[OL JVUJLU[YH[PVU
Test” Mode.
2. *V\U[HUV[OLY HSPX\V[VM [OL ILHKZ ZHTWSL
YLZ\S[Z ZOV\SK IL ^P[OPU VM LHJO V[OLY
3. 0M [OL YLZ\S[Z HYL]HSPK H]LYHNL [OL [^V J
[OLT ^P[O [OL ILHKZ HJJLW[HISL YHUNLZ
4. 9LJVYK HSS YLZ\S[Z HSVUN ^P[O WLY[PULU[P
WLYZVU Z UHTL WLYMVYTPUN [OL WYVJLK\YL

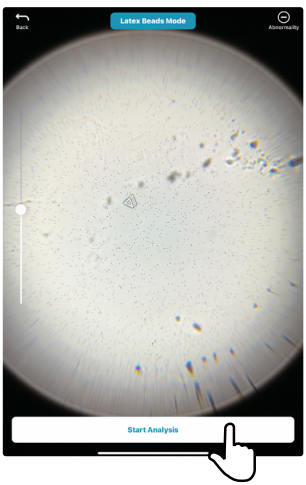
0UZ[Y\J[PVUZ MVY 3H[L_)LHKZ ;LZ[

1. Open the iSperm app. Go to “Settings & Help” and tap “Latex Beads Test”.





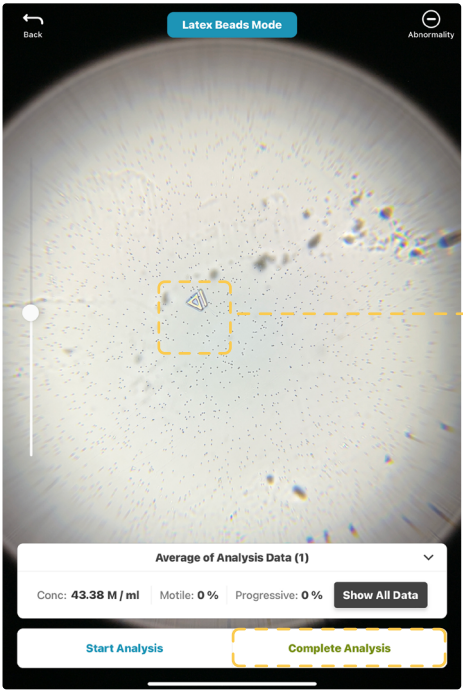
*OLJR [OH[[OL]PL^ PZ 62 HUK [HW ¸:[HY[(U

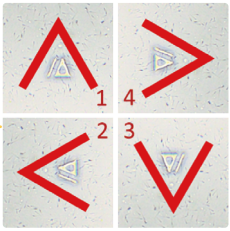


Latex Beads Test – 3/4

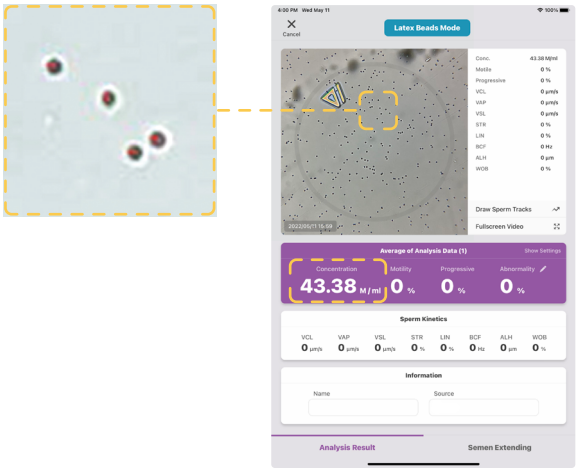
<ZL]PL^ HUHS`ZPZ [V VI[HPU [OL H]LYHNLK
[OL HYYV^ á MVY L]LY`:TLHZ\YLTLU[
:VM[^HYL % :LTLU (UHS`ZPZ ]PL^ HUHS`ZPZ K
[V ÄUPZO [OL [LZ[Z

, then tap “Complete Analysis”





4. Toggle to see the beads labeled in red, and the average of the four concentrations.



Concentration too high or too low

-VSSV^ :[LW [V ZLL PM HSS [OL ILHKZ HYL ^LS

- 0M ^LSS SHILSLK
  - . Mixing error: Mix latex beads again for even distribution.
  - . Pipetting error: Reload the chip and be careful to avoid overloading the chip or underloading the chip.
  - . *VUÄYT [OL SH[L_ ILHKZ JVUJLU[YH[PVU \ZP
  - . Contact the distributor if all the above issues are checked, and the problem still exists.
- 0M UV[^LSS SHILSLK
  - . It may be caused by lens contamination or abnormal light source. Contact the distributor for further assistance.

02
Sampling

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Preferred Specimens

2

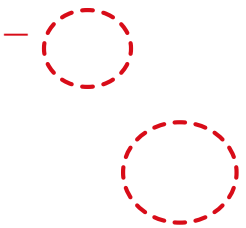
Low concentration

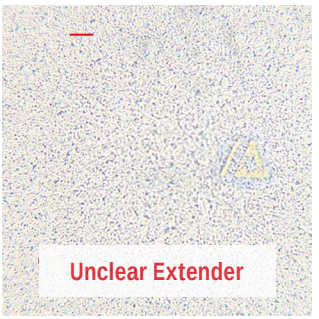
2

High concentration

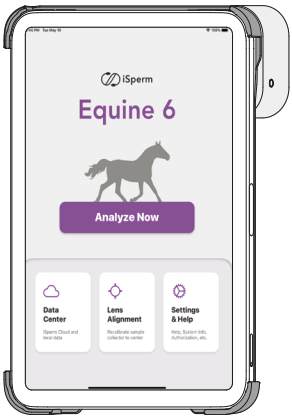
Debris

Bubbles





Items in Use



iSperm

P7HK TPUP 3LUZ /LH[L

Sample Collector

Stand

Base Chip

Eppendorf

Dropper

Cover Chip

Measuring Cup

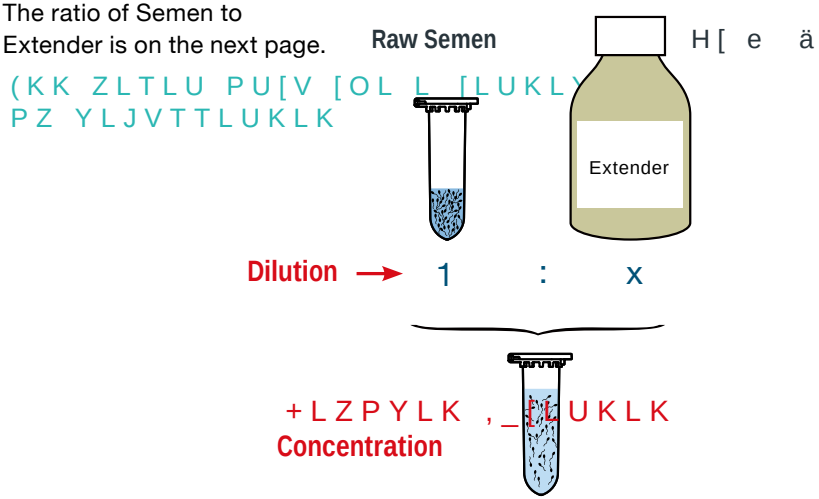
Pipette & Tips

Range of analysis:

Parameters	Full Range	6 W [P T P a L K 9
Concentration	T P S S P V U T S % T P S S P V U T S M V Y X \ P T P R S S P V U T S W Y L] P L ^ [L Z [V U S `	
Motility	0%-100% at J V U J L U [Y H [P V U I L [J V U J L U [Y H [P V U I L [^ L L U H U K T P S S P V U T S H U K T P S S P V U T S	0%-100% at
Progressive Motility	0%-100% at J V U J L U [Y H [P V U I L [J V U J L U [Y H [P V U I L [^ L L U H U K T P S S P V U T S H U K T P S S P V U T S	0%-100% at

Dilution example:

The ratio of Semen to Extender is on the next page.



Semen Dilution Principle – 2/2

9LX\PYLK KPS\[PUN ZLTLU [V 4 TS [V VI[HP
and the kinematic parameters.

Species	Typical Concentration	Species	Typical Concentration
,X\PUL	4 T3	Caprine	4 T3
Canine	4 T3	Ovine	4 T3
:^PUL	4 T3	Poultry	4 T3
Bovine	4 T3	Cervine	4 T3

		,Z[PTH[LK 9H^ *VUJ 9HUNL							
Applicable Species									
Concentration [OH[KPS\[L	to 30 M/ml	60.00	90.00		240.00	390.00	630.00	990.00	
	to 50 M/ml	100.00			400.00				
:LTLU ! ,_[LUKLY 1:X									

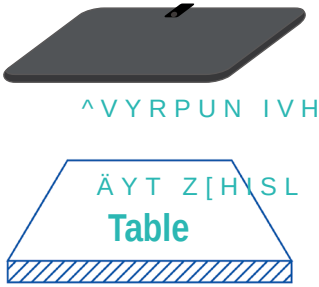
. +PS\[L KPYLJ[S` MYVT OPNO JVUJLU[YH[PVU ^PSS JH unexpectedly.

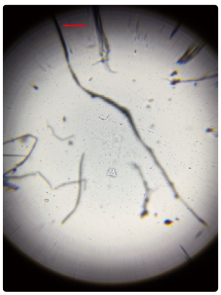
. 9LX\PYLK ^LSS TP_ [OL ZLTLU ^OLU KPS\[PUN LZWL JVUJLU[YH[PVU (SZV [OL ZLTLU V\[ZPKL [OL WPWL[semen volume, so please avoid dipping the pipette tube into the extender.

. ;OL TPUPT\T]VS\TL YLX\PYLTLU[MVY KPS\[PVU PZ \3 TH` JH\ZL H ZPNUPÄJHU[LYYVY 9LJVTTLUK dilution.

;OPZ Z[LW PZ ULJLZZHY` MVY HSS ZHTW

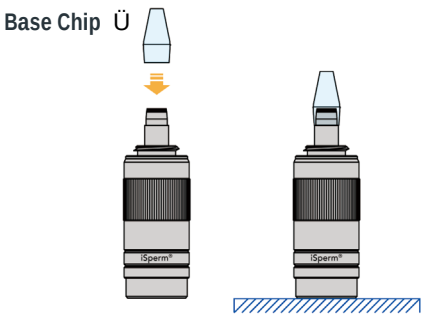
. <ZL [OL ^VYRPUN IVHYK PU [OL P:WLYT)YPLM stable surface (e.g., table).
. *SLHU [OL ^VYRPUN IVHYK [HISL Z\YMHJL
. Dusty surface could contaminate “Cover Chip” and hinder the analysis.





P:WLYT]PL^ VM K\Z[
ÄILY VU [OL *V]LY *O

. Mount “Base Chip” onto Sample Collector.
. Place “Sample Collector” on the table.



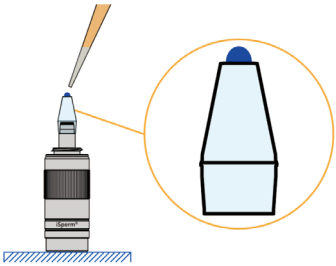
ÄYT HUK Z[HISL [HISL

Three Methods of Sampling

. 7PWL[[L 4L[OVK

. :HTWSL]VS\TL! ›3

.)LZ[^OLU [OL [LJOUI MHTPSPHY ^P[O WPW ^OLU SPTP[LK ZWLYT



/ +YVWWLY 4L[OVK

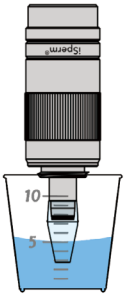
. :HTWSL]VS\TL! « ›3

.)LZ[^OLU WYLMLYYPU WPWL[[L HUK ^P[O Z\IJ

« ›3 JKSL

0 +PWWPUN 4L[OVK

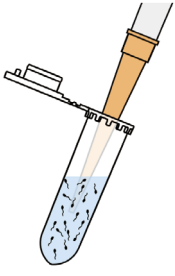
. -VY X\PJR WYL]PL^ [LZ[Z MVY Ä_LK ZWLYT

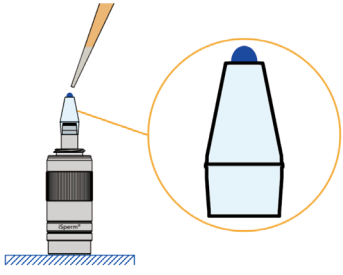


1. Use a Pipette to mix the semen gently and thoroughly.

- [PTLVZTHRL [OL ZLTLU ^LSS TP_LK HUK L
- .LU[SL ZWLLK to prevent bubbles.

2. Drop › 3 onto the Base Chip center area.

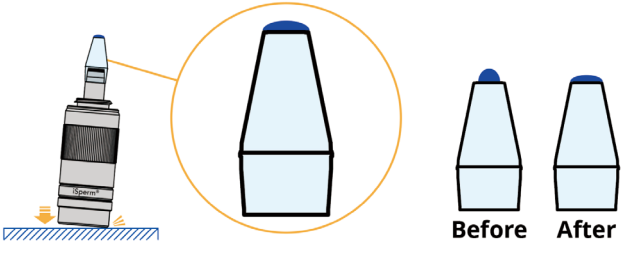




3. Give Sample Collector a gentle knock against the table to spread the droplet.

- -SH[ZLTLU KYVWSL[PZ JY\JPHS [V YLK\

ÅH[KYVWSL[



H NLU[SL RUVJR ^VGSK
KV [OL [YPJR

*Go to next step as soon as possible

Pipette Method – 2/2

4. Place “Cover Chip” VU H JSLHU [HISL ^P[O VWLU ZPKL

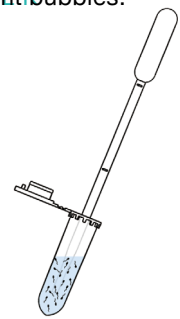
-SPW :HTWSL *VSSLJ[VY KV^U^HYK

• +YVWSL[^PSS YLTHPU VU)HZL *OPW

7YLZZ)HZL *OPW PU[V *V]LY *OPW]LY[PJHSS
ÄYZ[" [OLU JVU[PU\L [V WYLZZ KV^U MVY HUV

1. Use a dropper to mix the semen gently and thoroughly.

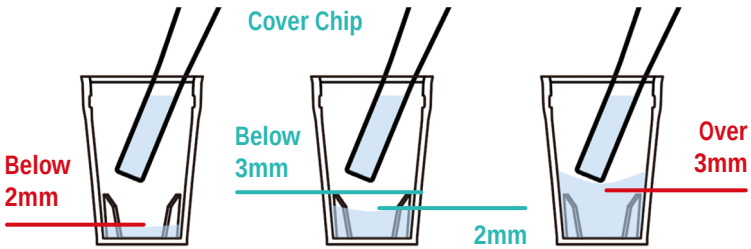
- [P T U Z N L U L Y H S [V T H R L [O L Z L T L U ^ L S S distributed
- N L U [S L Z W V L H to prevent bubbles.



T S + Y V W W L Y

2. Use a dropper to inject › 3 into Cover Chip.

- About 2mm height e › 3 P U * V] L Y * O P W P Z Z \ I J P L U
- Over 3mm height e › 3 ^ P S S S L H K [V Z W P S S V] L Y ^ (^ P [O) H Z L * O P W

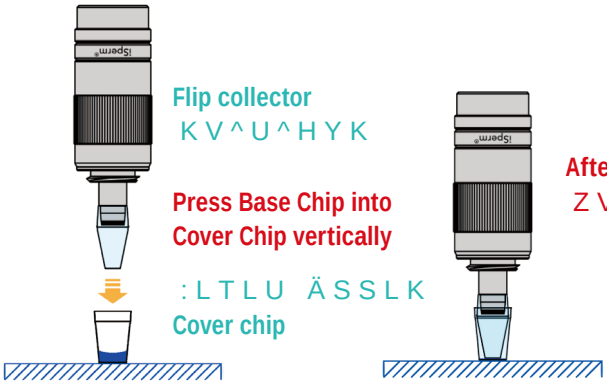


Dropper Method – 2/2

7SHJL ZLTL “Cover Chip” KU H JSLHU [HISL ^P[O VW
facing up.

:HTWSL *VSSLJ[VY -SPW KV^U^HYK

7YLZZ)HZL *OPW PU[V *V]LY *OPW]LY[PJHSS
ÄYZ[" [OLU JVU[PU\L [V WYLZZ KV^U MVY HU

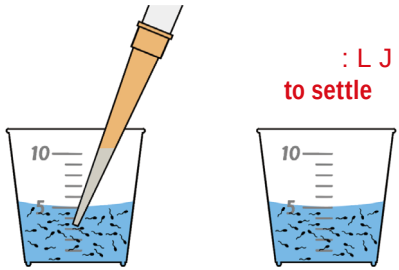


;OPZ TL[OVK PZ MVY X\PJR WYL]PL^ [LZ[Z V

<ZL H OPNO]VS\TL +YVWWLY 7PWL[[L [V TP_
thoroughly.

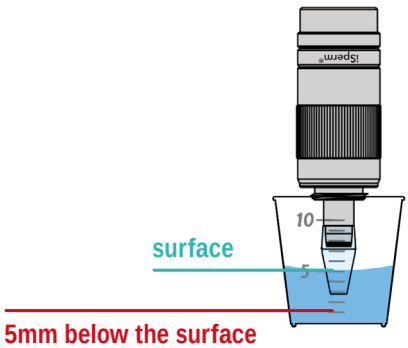
>HP[ZLJVUKZ [V SL[[OL ÅV^ ZL[[SL

- **Fast** TPJYVÅV^ JH\ZLZ \UJLY[HPU[` K\YPUN [OL



: L J
to settle

3. Dip Base Chip into semen.
   - Immerse Base Chip TT ILSV^ [OL ZLTLU Z\YMHJL

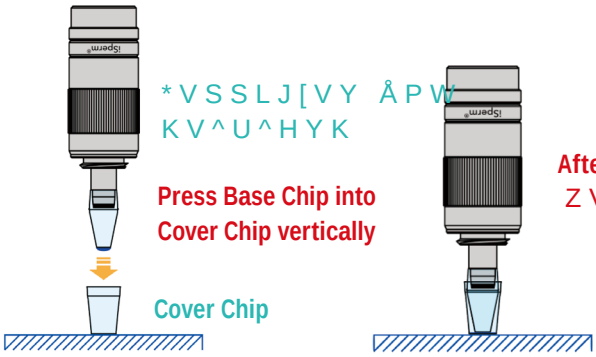


Dipping Method – 2/2

4. Place “Cover Chip” VU H JSLHU [HISL ^P[O VWLU ZPKL

-SPW :HTWSL *VSSLJ[VY KV^U^HYK YLTPU VU

7YLZZ)HZL *OPW PU[V *V]LY *OPW]LY[PJHSS
ÄYZ[" [OLU JVU[PU\L [V WYLZZ KV^U MVY HUV



03
Software

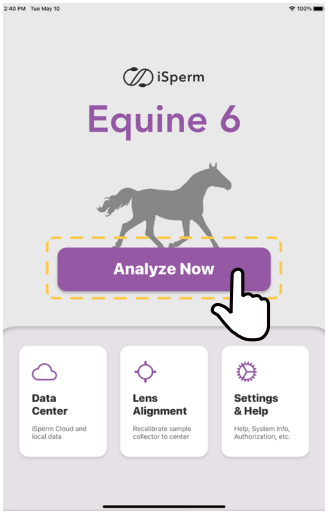
Back to Index

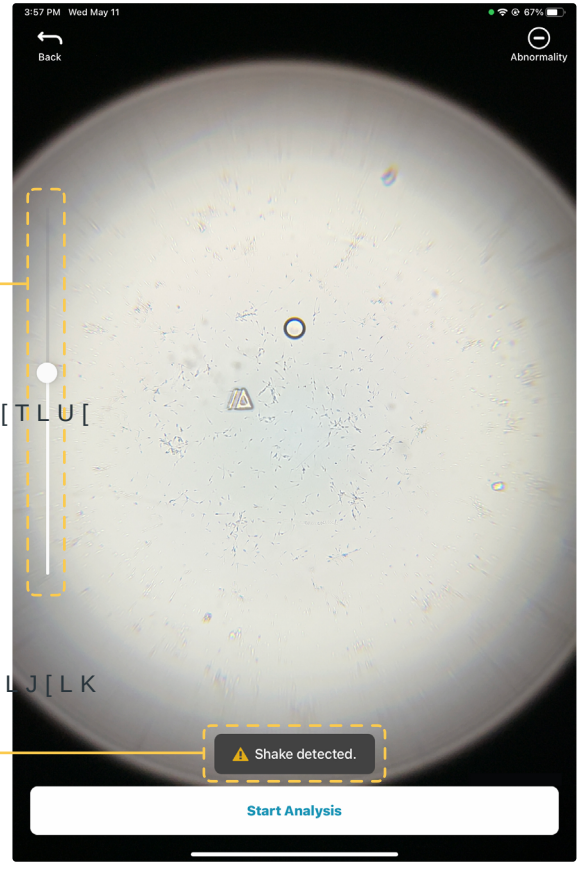
1 Place the iPad on a stand.

Do NOT lean Sample Collector against the table

à :[HUK

6WLU [OL P:WLYT HWW HUK [HW ¸(UHS`aL 5V





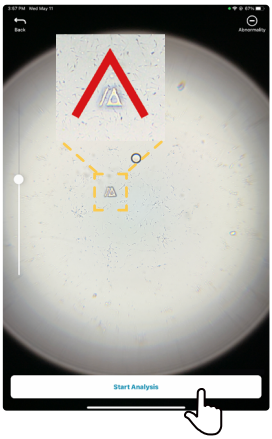
Manual focus
HKQ\Z[TLU[

Warning shows up if the shake
PZ KL[LJ[LK

Semen Analysis – 3/4

4. Rotate Collector until the logo is pointing up. Tap “Start Analysis.”

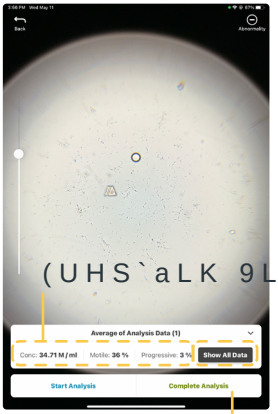
4\S[PWSL]PL^ [`WPJHSS`]PL^ HUHS`ZP



Rotating Collector gently

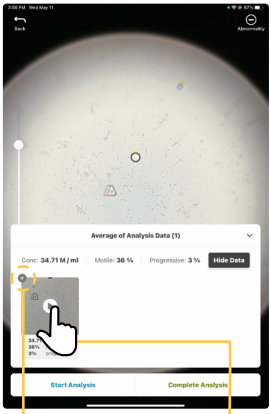
^PSS KV [OL

*OLJR [OL HUHS`aLK YLZ\S[



8

(UHS`aLK 9LZ\S[Z

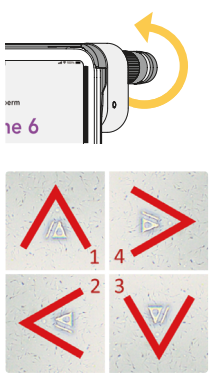


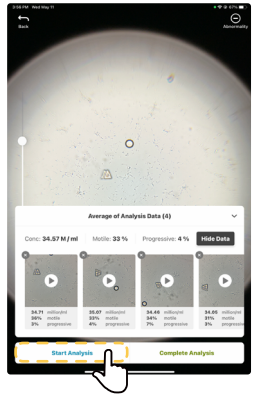
Tap “Show All Data” to

;HW ¸?¹ [V KTapSImage to

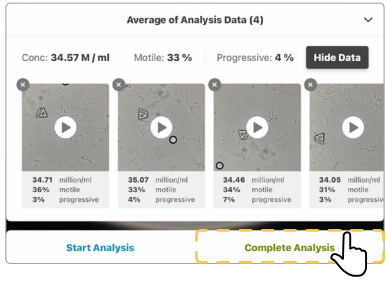
]PL^ [OL KL[HPSZ H TLHZ\YLT[PU[^ H]PKL

9V[H[L *VSSLJ[VY [V JVTWSL[L]PL^ HUHS`Z for every direction.

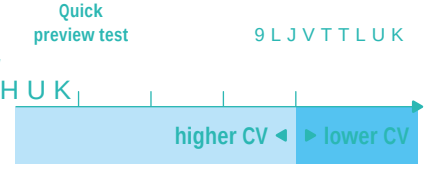




7. Check the “average” of the repeated tests on the screen.
;HW ¸*VTWSL[L (UHS`ZPZ¹ [V ÄUPZO HUK JVUJ



The relationship IL[^LLU]PL^Z HUK CV values:



Manual Assessment of Abnormal Morphology

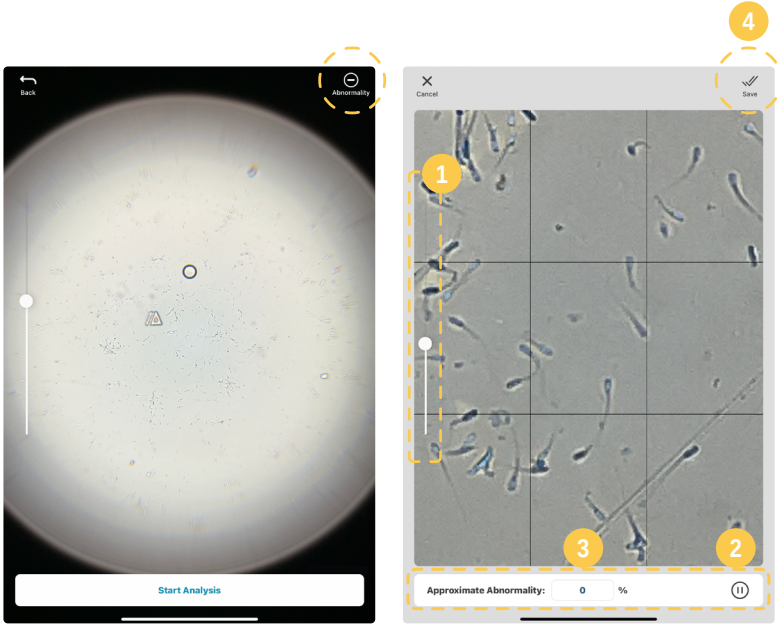
+\YPUN [OL ¸:LTLU (UHS`ZPZ¹ Z[LW [HW [OL PJ
sperm morphology manually.

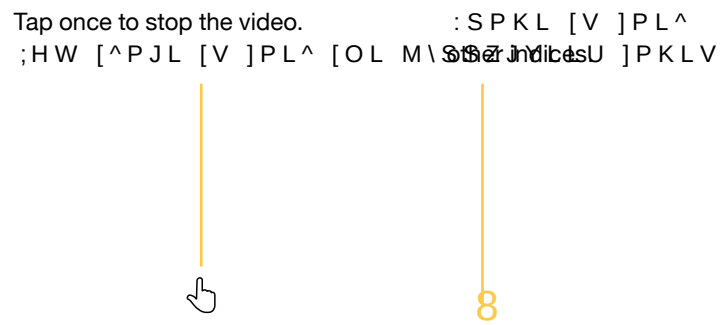
Follow the steps:

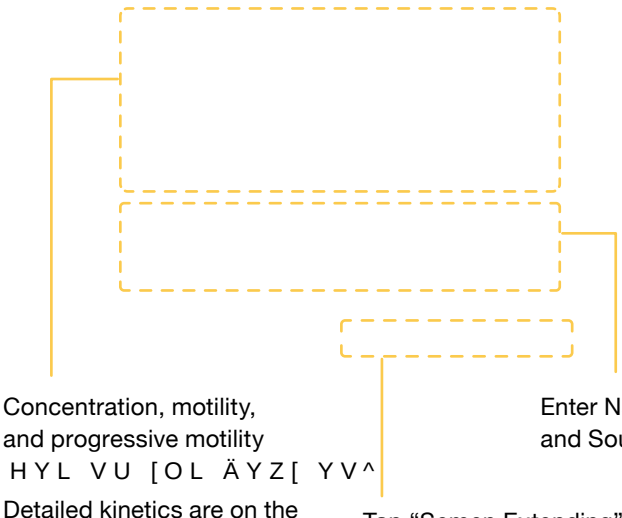
1. Use the manual focus bar to adjust the focus.

;HW [OL ¸7H\ZL I\[[VU¹ [V MYLLaL [OL PTHNL
-PSS PU [OL LZ[PTH[LK HIUVYTHSP[` PU[V [O

4. Tap “Save” to leave.




Tap once to stop the video.
8


Concentration, motility,
and progressive motility
Detailed kinetics are on the
Enter Name
and Source.
Tap “Semen Extending” or slide
left to go to the Extending page.

Analysis Result – 2/2

;HW [W +YH^ /PKL :WLYT ;YHJRZ

Sperm tracks are labeled in 4 colors:

- Progressively Motile
- Motile
- Static
- Late Track

Multiple Issues

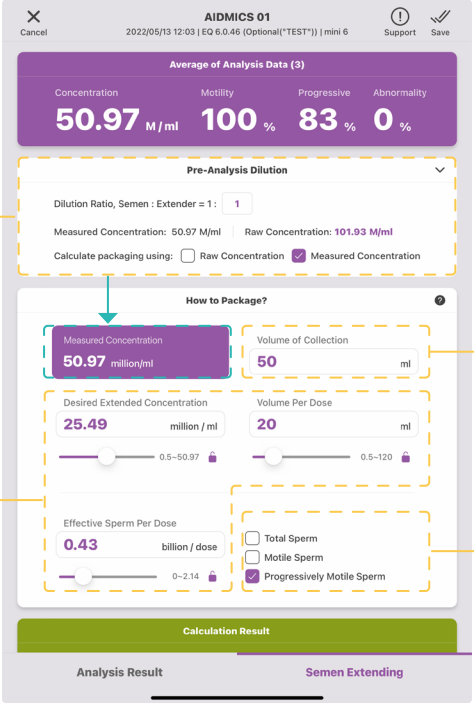
- :L]LYL PTW\YP[` <UHISL [V [YHJR ZWL
- 3HYNL I\IISLZ VY KLIYPZ KL[LJ[LK
- :OHRL KL[LJ[LK

-PSS PU [OL YH[PV VM ZLTLU HUK L_[LUKLY HU

Measured Concentration for calculation. **The chosen one will show in the How to Packaging Section**.

. eg. 1:1 means the semen is diluted in half.

. ;OLYL ^PSS IL [^V RPUKZ VM JVUJLU[YH[PVU! [OL VYPNPUHS
[OL TLHZ\YLK JVUJLU[YH[PVU IHZLK VU [OL KPS\[PVU YH[PV



Fill in the Volume of Collection

Fill in or use the control bars to adjust values.

Choose Total, Motile or Progressive Sperms for calculation.

. (\[VTH[PJHSS` JHSJ\SH[L [OL TPU TH_ ]HS\LZ JVUZ[YHPULK I`
other parameters.

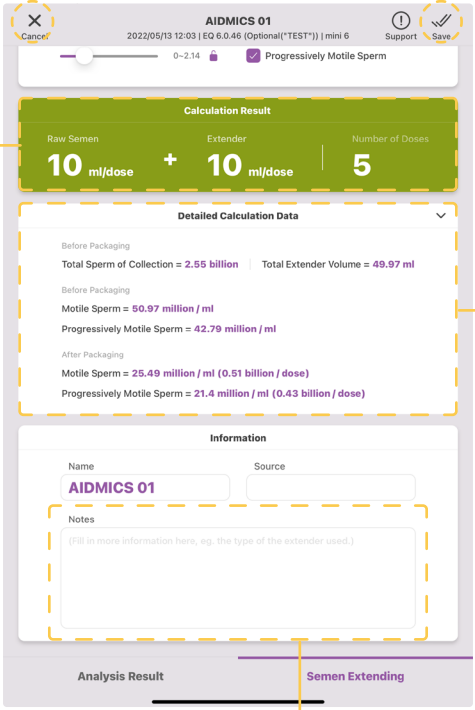
. The Desired Extended Concentration, the Volume Per
+VZL HUK [OL ,HLJ[P]L :WLYT 7LY +VZL HYL SPURLK [VNL[OL
JOHUNPUN VUL»Z]HS\L ^PSS]HY` [OL]HS\LZ VM [OL V[OLY [^

. 7YLZZ [OL SVJRZ I\[[VU [V Ä_ [OL J\YYLU[ ]HS\L

Semen Extending – 2/2

Tap the button on the top left corner to leave ^P[OV\[ZH]PUN [OL KHL[H

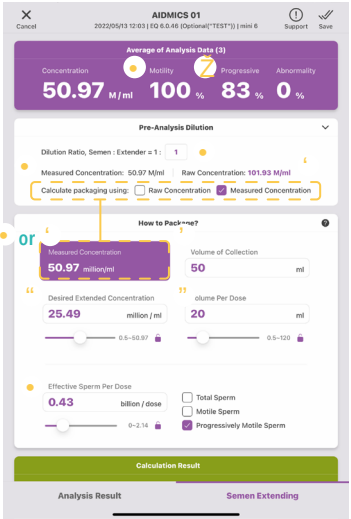
Tap the button on the top right corner to save the result.

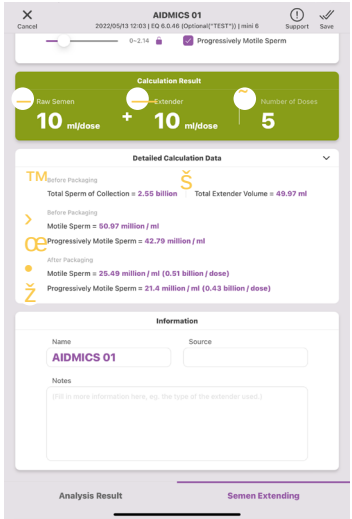


;OL JHSJ\SH[PVU YLZ\S[^PSS, X\H[PVUZ MVY H\[VTH[PJHSS` ZOV^U ILSV^ ^OLU [OL ÄUHS HYL HSS ÄSSLK PU

Fill in the supplemental information.

Calculation Result and Detailed Data is on the next page.





9 H ^ * V U J L U [Y H [P V U = Measured Concentration X (1+n) [For 1:n dilution]

Example: 101.93 $ X (1+1)

9 H ^ : L e n Per Dose = Desired Extended Concentration X Volume Per Dose / 9 H ^ r Measured Concentration

Example: 10 $ X 20 or

Extender Per Dose = Volume Per Dose - 9 H ^ : L T L U 7 L Y + V Z L

Example: 10 = 20 - 10

Number of Doses = (9 H ^ * V U J L U [Y H [P V U / Desired Extended Concentration) X Volume of Collection / Volume Per Dose

Example: 10 = (101.93 ?)

@ V \ J H U J O V V Z L [V Y V \ U K [O L U \ T I L Y V M K V Z L Z M Y V T Z L [[P U N Z

Equations for Semen Extending – 2/2

+ L [H P S L K * H S J \ S H [P V U + H [H

Before Packaging

Total Sperms of Collection = 9 V ^ or Measured Concentration X Volume

, _ H T W S L ! TM P $ S S P V U T P • S or ' V 0 ' '

Total Extender Volume = Extender Per Dose X Number Per Doses

Example: 49.97 š = 10 — ? ~

Motile Sperm = 9 H ^ or Measured Concentration X Motility

, _ H T W S L ! › $ • or ' X 100% •

Progressively Motile Sperm = 9 H ^ or Measured Concentration X Progressive

Example: 42.79 œ $ • or ' ? Ž

After Packaging

$$\text{Motile Sperm} = \frac{\text{9 H ^ or Measured Concentration X Motility X 9 H ^ : L T L U 7 L Y}}{\text{Volume Per Dose}} + \text{V Z L}$$

, _ H T W S L ! • $ • or ' X 100% • X 10 — "

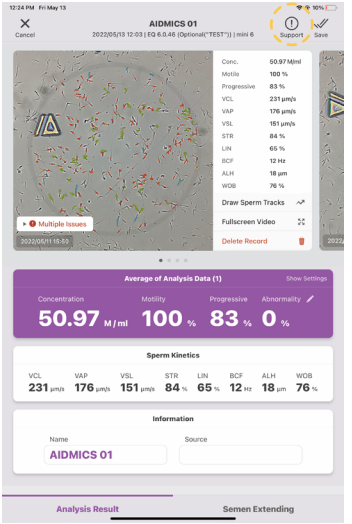
I P S S P • ' U $ ~) T P S S P V U

$$\text{Motile Sperm} = \frac{\text{9 H ^ or Measured Concentration X Progressive X 9 H ^ : L T L U 7 L Y}}{\text{Volume Per Dose}} + \text{V Z}$$

Example: 21.4 ž $ • or ' ? Ž X 10 — "

I P S S P ž ' U $ ~) T P S S P V U

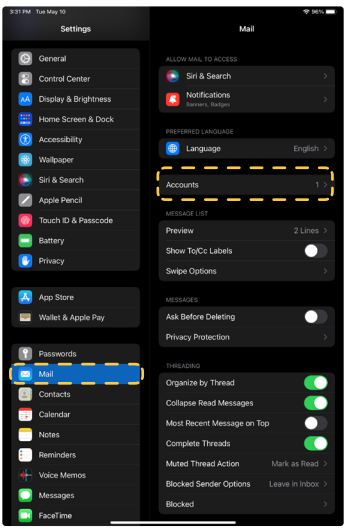
Tap Support to send the data of abnormal measurements via email directly from the iPad. (Please set up the Mail app before using this function.)



Set Up the Mail Apps

If you're been using Mail App on your P7HK WSLHZL ZRPW :`Z[LT 1

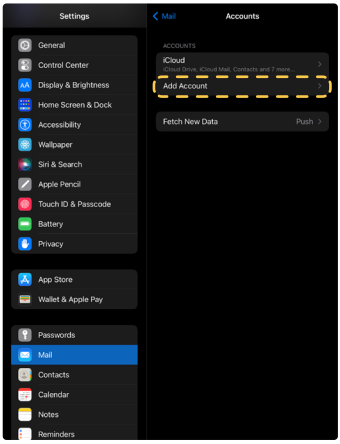
1. Go to "Settings" and Scroll KV^U [OL ZPKLIHY [V "Mail" and tap "Accounts".



Supporting System – 2/4

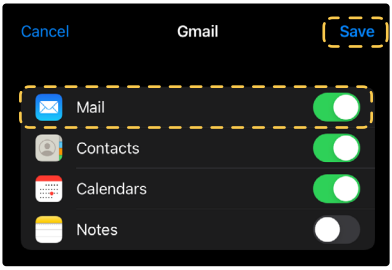
;HW ¸(KK (JJV\U[¹ HUK JOVVZL [OL ZLY]PJL [O
account on, such as Google or Yahoo.

0M [OPZ PZ H ZOHYLK KL]PJL ^L Z\NNLZ[JYLH
@V\ TH` MVSSV^ [OL N\PKL ILSV^ [V JYLH[L HU
O[[WZ! Z\WWVY[HWWSL JVT N\PKL PJSV\K JYLH[L
HKKYLZZ TTKK K J J PJSV\K

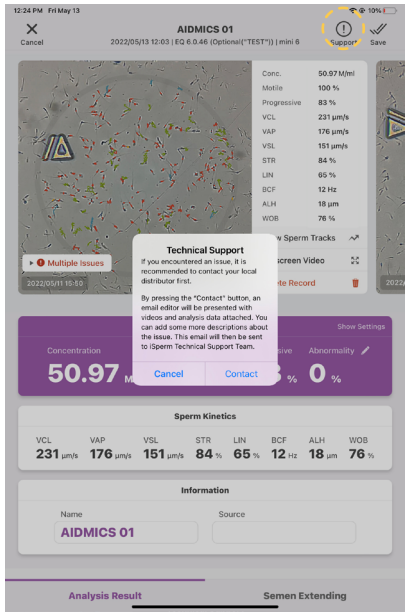


8

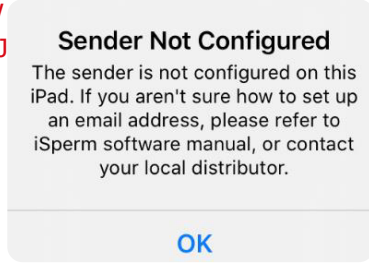
(M[LY SVNPU WSLHZL [\YU VU [OL ¸4HPS¹ ZL
click to save.



;HW ¸:\WWVY[¹ HUK [OL YLX\PYLK KH[H ^PSS
draft automatically.



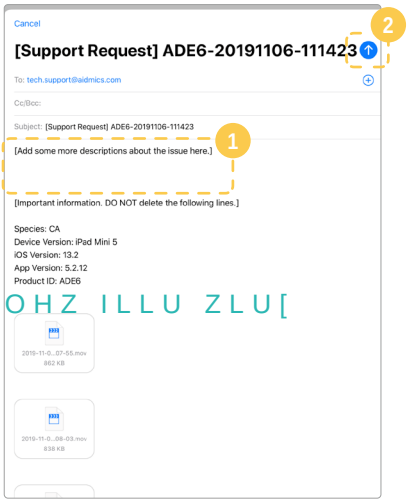
0M `V\ ZLL [OL WVW
YPNO[NV IHJR [V J
ZLUKLY PZ YLHK`



Supporting System – 4/4

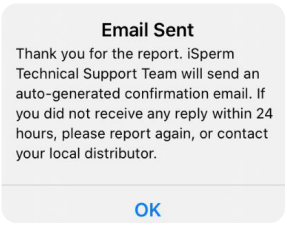
2. Please describe the issue and **DO NOT DELETE** any auto-generated information.

3. Make sure the Internet connection is okay, and tap to send the supporting mails.

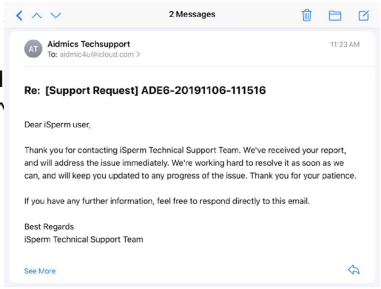


- **The “Email Sent” will pop up**

  H M [L Y [O L T H P S O H Z I L L U Z L U [



(M [L Y H M L ^ T P U \ [L
receive an auto generated
Z \ W W V Y [Y L X \ L Z [T H
4 H P S (W W 7 S L H Z L ^
further technical support.

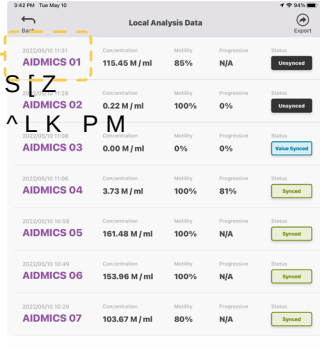


0 M ` V \ K P K U » [Z L L [O L T H P S W S L H Z L J O L J R
H N H P U V Y J V U [H J [` V \ Y K P Z [Y P I \ [V Y (\ [V
J H [L N V Y P a L K H Z Z W H T Z V W S L H Z L J O L J R [

(SPZ[VM TLHZ\YLTLU[YLZ\S[Z Z[VYLK

Tap any measurement to]PL^ KL[HPSLK YLZ\S[Z

- =PKLVZ JHU IL]PL^LK PM they are stored during the analysis.
- Only the Animal Name and Source can be edited.



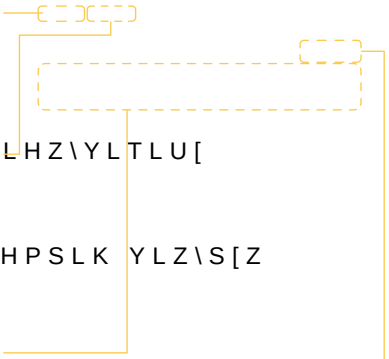
:^PWL [V [OL SLM[HUK [HW ¸+LSL[L¹ [V KLSL[measurement result.

Data Center - Online Charts

(NYHWO OLSWZ `V\ [V]PZ\HSPaL HSS [

Tap to change X and Y-Axis.

Tap to change Sort.



;HW [V KV^USVHK 4LHZ\YLTLU[
history in Excel format.

;HW [V]PL^ [OL KL[HPSLK YLZ\S[Z

Tap Animal Report to
]PL^ HSS TLHZ\YLTL