SpineScan3D™

Avalon SpineCare (HK) Limited

INSTRUCTION FOR USE (Rev 1.2, 2017-11)

Importance: Please read this Instruction For Use before using SpineScan3D

COMPANY INFORMATION
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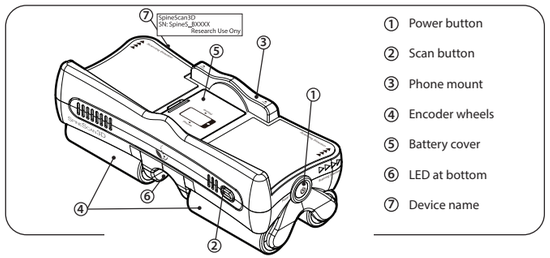
1. INTENDED USE OF SPINESCAN3D

The SpineScan3D is intended for screening the spine by capturing its tilts and degree of rotations along the spine length. To operate the SpineScan3D, a mobile phone with Android or IPhone platforms should be in place with a mobile application (App) "SpineScan3D" being installed to serve as the control interface. User must follow the instruction in this document.

The SpineScan3D is a system that includes the hardware, software, network, App, workflow and algorithm, which are developed for Research Purpose Only and NOT For Sale. User must NOT use the SpineScan3D for purposes other than stipulated and are bound to the Terms and Conditions.

2. DESCRIPTION OF SPINESCAN3D DEVICE

The SpineScan3D device has several functional features as described below:



① Power button
② Scan button
③ Phone mount
④ Encoder wheels
⑤ Battery cover
⑥ LED at bottom
⑦ Device name

3. PRECAUTIONS

- User is required to read all the instruction and watch the instruction video in the App before use. The instruction video can be viewed anytime from the App "SpineScan3D".
- Do not immerse the device into any liquid.
- Operating temperature and humidity is in the range of 18-35 °C and 20-80 %, respectively.
- Do not press too hard against the spine.
- Stop applying the device on the Subject when the Subject feels uncomfortable or pain.
- Do not use the device when it is damaged or defective.
- Do not use the device if the two pairs of wheels are not in alignment or are not leveled if laid resting on horizontal plane.
- User should be cautions if the Subject:
  - has spine fracture or a history of spine fracture;
  - has wounds on the skin of the application area.
- Only use the device in environments where wireless Bluetooth transmission is permitted.
- For Subject carrying implanted medical devices, always consult their healthcare providers before use.

4. SPECIFICATIONS

Measurement range (Tilt Angle)	90 to 90 deg
Measurement resolution (Tilt Angle)	0.01 deg
Measurement resolution (Change of angular speed)	0.5 deg/s
Displacement measurement resolution	0.5 cm
Connectivity	Bluetooth v4.0 BLE
Power (battery not included)	Alkaline 1.5 V (AAA Size) x 3
Dimension	200 mm (W) x 70 mm (H) x 82 mm (D)
Weight	325 g (excluding battery)
Supported phone width	65-78 mm

5. PROCEDURES FOR USE

Installation of the Android App "SpineScan3D"
5.1. The App supports Android version 4.3 or above.
5.2. Install the software via either:
  5.2.1. Google Play Store, or;
  5.2.2. Download the App from the download section of the company's website (www.spinescan3d.com) using the browser in the Android phone.
    5.2.2.1. Make sure that your phone allows installation from "Unknown Sources" in the default setting.
    5.2.2.2. When download is complete, tap on the file to start installation.
    5.2.2.3. It is recommended to disable the "Unknown Sources" after the installation.

Installation of the iOS App "SpineScan3D"
5.3. The App supports iOS version 8.0 or above.
5.4. Install the software via App Store.
  5.4.1. Open the App Store on your iPhone to browse SpineScan3D App.
  5.4.2. Tap on the App to view the App's product page.
  5.4.3. Tap "Get" to get the App.
  5.4.4. Might need to enter the password to complete your download and installation.

6. REGISTRATION BEFORE USE

For first time User, registration is required before use.
6.1. Launch the App by clicking the icon "SpineScan3D" on the phone.
6.2. Press "Register" to start the registration procedure.
6.3. Enter the following information:
  6.3.1. Email Address
  6.3.2. Password
  6.3.3. Country of operation
  6.3.4. Role (select "Doctor" or "Nurse" from the pull-down list)
6.4. Read and click the box for accepting the Terms and Conditions.
6.5. Press "Register" to complete the registration.
6.6. An email notification with a link to activate the account will be sent to the registered email address.
6.7. Click the link in the email to activate the account.
6.8. Registered User can login to the App homepage after successful registration.

7. ROUTINE OPERATION PROCEDURE

7.1. Ensure 3 x AAA batteries are inserted as shown in the device.
7.2. Disinfect the wheels with 70% alcohol swab/wipe.
7.3. Mount the phone on the extendable holder of the device. The arrow printed on the holder shows the extending direction. Pull the holder gently according to the direction displayed.
Caution: Avoid the side buttons of the phone being pressed by the holder. Adjust the phone position when it occurs.
7.4. Turn on the device by pressing the "Power" button.
7.5. The Red-Green LED flickers in a normal startup. If battery is low, the Red LED flickers and battery replacement is needed.
7.6. Launch the "SpineScan3D" App on the phone.
7.7. Login to the registered account.
7.8. Ensure the Bluetooth function of the phone is on. Click "Open" and then "Allow" if the Bluetooth function is off.
7.9. Click "Connect" to connect the device with the phone via Bluetooth.
7.10. Select the device to pair from the device list. The device name has prefix of "SpineS_" and is labelled on the device body.
7.11. After the connection is established, Press "Scan" on the phone to start the scanning procedure.
7.12. Input Subject data:
  7.12.1. For a first-time Subject;
    7.12.1.1. Press "+ New Subject" at the bottom on the "Select Subject" screen.
    7.12.1.2. Input the Subject related information as requested.
    7.12.1.3. Press "Save" to create the Subject record.
  7.12.2. For a re-visiting Subject;
    7.12.2.1. Search by entering the ID on the search field.
    7.12.2.2. Select the Subject from the search result list.
7.13. User can opt to take a photo record of the Subject's back for the scan. Local regulatory requirements for electronic records storage apply.
7.14. Press "Start Scanning" to proceed.
7.15. The Subject is required to stand in the **Forward-Bending Posture** as shown in the App interface on the phone.
7.16. Place the device at the buttock cleft of the Subject. Ensure the Scanning direction is correct.
7.17. Press the "SCAN" button on the device for starting the measurement. The LED turns on and stays on GREEN.
7.18. Starting from the level of the iliac crest, move the device steadily along the spinous process of the vertebral column of the Subject until it reaches C7 of the neck. Ensure the encoder wheels have good contact on the Subject's skin. It is recommended that the spinous process should be marked to ensure the scanning is along the spinous process.
7.19. Real-time tilt reading and the incremental spine distance are displayed. Warning message(s) prompt/prompts if unusual measurement(s) is/are detected.
7.20. Press the "SCAN" button again on the device for completing the measurement. The GREEN LED flickers.
7.21. If unusual measurement(s) is/are detected during the scan, warning message(s) is/are prompted. The User can choose "Retry" to repeat the scan from step 7.15 or "Continue" to save the record and proceed to the next step.
7.22. The App shows the **Standing Posture** for Subject to follow.
7.23. Place the device at the neck of the Subject. Ensure the Scanning direction is correct and prevent initial tilt.
7.24. Press the "SCAN" button on the device to start the measurement. The LED turns on and stays on GREEN.
7.25. Move down the device steadily along the vertebral column of the Subject until it reaches the buttock cleft. Ensure the encoder wheels have good contact on the Subject's skin.
7.26. Press the "SCAN" button again on the device for completing the measurement. The GREEN LED flickers.
7.27. If unusual measurement(s) is/are detected during the scan, warning message(s) is/are prompted. The User can choose "Retry" to repeat the scan from step 7.22 or "Continue" to save the record and complete the measurement.
7.28. A bending scan summary, ("results from **Forward-Bending Posture**" only), is displayed. Press "Back" to go back to home screen of the App.
7.29. After scanning, Subject can opt to fill in a questionnaire regarding the health of his/her spine.
7.30. Disinfect the wheels of the device with 70% alcohol swab/wipe before performing the scan on the next Subject.
7.31. After use, turn off the device, detach the phone and store the device in a cool and dry place.

Data Synchronization

The data will be synchronized automatically when the mobile phone is connected to the Internet with the "SpineScan3D" mobile application launched. Ensure that the mobile phone can be connected to the Internet 1) during or 2) no longer than 1 week after the measurement. This is critical for keeping the data in cloud database updated.

- Warning message will pop up if data has not been synchronized for more than one week.

8. INDICATIONS OF DEVICE STATUS

LED Indicator	Information
Flickering Red	Battery is low in voltage
Flickering Red-Green	Fail in establishing Bluetooth connection
Flickering Green	Succeed in establishing Bluetooth connection
Constant Green	The scan button is pressed and the measurement is in progress

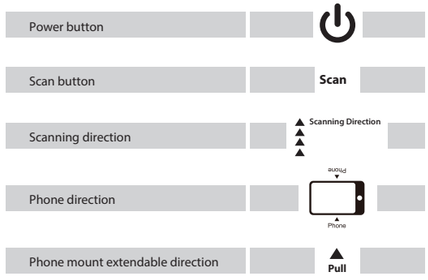
Warning messages will pop up on the interface of the phone through the "SpineScan3D" App (Refer to Section 10.2.2).

9. STORAGE CONDITIONS

- Store the device in cool and dry place.
- Remove the battery when the device is not used for a long time.

10. WARNING AND LABELS

10.1. SpineScan3D device:



10.2. SpineScan3D mobile application:
10.2.1. In the scan summary, the tilt angle is coloured according to the range of angle.

Default Range [Unsigned Degree]	Colour
0.0-2.9	White
3.0-4.9	Yellow
5.0-14.9	Red
> 15.0	Red

10.2.2. When unusual measurements are detected, a warning message is appended next to the icon ❗ in the App interface:

Warning Description	Suggested Action
Initial bending angle out of range **(Forward-Bending Posture)**	Check Subject's posture and placing position of the device. Retry if necessary.
Forward tilt angle exceed limit	Check Subject's posture and avoid accidental movement during operation. Retry if necessary.
Initial bending angle out of range **(Standing Posture)**	Check Subject's posture and placing position of the device. Retry if necessary.
Device moving too fast - exceed maximum speed	Retry and slow down the measurement speed.
Device moving too slow - fail to reach minimum speed	Retry and increase measurement speed to ensure continuous measurement.
Measured tilt angle range 3.0-4.9 [unsigned degree]	Check on the Subject's posture and spine. Retry if necessary.
Measured tilt angle range 5.0-14.9 [unsigned degree]	Check on the Subject's posture and spine. Retry if necessary.
Measured tilt angle > 15.0 unsigned degree	Check on the Subject's posture and spine. Retry if necessary.

11. REPAIR AND MAINTENANCE

User must **NOT** by his/her own self or incur any other third party to repair or modify the device. If the device or the mobile App is not operating properly, please contact Avalon SpineCare (HK) Limited.

12. DISPOSAL

Please contact the Avalon SpineCare (HK) Limited for procedures to return the device.

13. TERMS AND CONDITIONS

User agrees that the device is licensed to the User for the use as stipulated in this Instruction For Use only. Furthermore, User acknowledges this device is for Research Purpose Only and NOT For Sale, and the use of the device does not amount to any medical treatment or diagnosis or professional advices of any disease or abnormality of the Subjects. User agrees that he or she will use the device in accordance to the local regulation applicable to the device.

All the proprietary right of the device, including but not limited to any technology, patent, copyright, trademarks, designs and trade secrets, remains in Avalon SpineCare (HK) Limited. In any circumstances, User must NOT, either by his or her own self or with any third parties, sell, assign, license, transfer, distribute, modify, rent, lease, loan, replicate, manufacture, reverse engineer the device, including the hardware, the software and related documents, in whole or in any part, without written permission from Avalon SpineCare (HK) Limited.

User expressly acknowledges and agrees that use of the device is at User's sole risk. The device, including the hardware, the software and the related documents are provided "as is" and without warranty of any kind. Avalon SpineCare (HK) Limited expressly disclaims all warranties, expressed or implied, including but not limited to the fitness of a particular purpose. Avalon SpineCare (HK) Limited does not warrant that the functions contained in the device, including the hardware and software, will be uninterrupted or error-free, or that defects will be corrected. Furthermore, Avalon SpineCare (HK) Limited does not warrant or make any representations regarding the results of the use of the devices in terms of the correctness, accuracy, reliability, or otherwise. No oral or written information or advice given by Avalon SpineCare (HK) Limited, including but not limited to the directors, employees nor representatives, create a warranty or in any way increase the scope of this warranty. Should the device prove defective, user contacts Avalon SpineCare (HK) Limited for arrangements in necessary servicing, repair or correction. Avalon SpineCare (HK) Limited does not warrant or guarantee that the features, benefits and functionality of the device will remain the same in future updates. User understands and agrees that any feature may change at the sole discretion of Avalon SpineCare (HK) Limited and that the use of any feature or function of the device may be discontinued or modified at the sole discretion of Avalon SpineCare (HK) Limited without notice to User.

Avalon SpineCare (HK) Limited shall not be held liable for any damages whatsoever resulting from the use or installation of this product regardless of the cause, including but not limited to defect in material or workmanship, misuse or improper installation of the device, accident regardless of cause, or negligent or faulty design. User hereby waives all liability claims against Avalon SpineCare (HK) Limited, its employees and directors, its partners and affiliates and its distributors. Avalon SpineCare (HK) Limited reserves the right to amend this Instruction For Use from time to time, without notice to the User.

SpineScan3D™

Avalon SpineCare (HK) Limited

使用说明书 (版本1.2, 2017-11)

注意: 请在使用SpineScan3D前阅读本使用说明书

公司资料
Avalon SpineCare (HK) Limited
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集成电路开发中心608-613 室
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电邮: info@spinescan3d.com

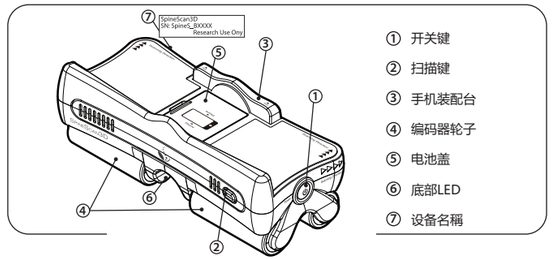
1. SpineScan3D预期用途

SpineScan3D用于量度人体脊柱的倾斜度和旋转角度。使用者可使用“SpineScan3D”应用程序(App)对SpineScan3D进行操作，该应用程序需要在配备安卓系统(Android or IPhone)的智能手机上运行。使用者使用时必须遵循本使用说明书中的使用说明。

SpineScan3D是一套包含了硬件，软件，网络，应用程序，工作流程和算法的系统，它们仅用作研究用途而非作出售用途 。使用者不可将SpineScan3D用于本说明书规定以外的用途，并且必须遵守使用条款与准则。

2. SpineScan3D设备描述

SpineScan3D设备的几个功能特点描述如下：



① 开关键
② 扫描键
③ 手机装配台
④ 编码器轮子
⑤ 电池盖
⑥ 底部LED
⑦ 设备名稱

3. 注意事项

- 使用者必须阅读本说明书中所有使用说明，并在使用前观看应用程序中的使用说明视频。使用者亦可随时在“SpineScan3D”应用程序内，观看使用说明视频。
- 请勿将本设备浸泡在任何液体中。
- 操作环境的温度范围为18-35°C，湿度范围为20-80%。
- 使用“SpineScan3D”时，请勿把本设备用力压在受试者的脊柱上。
- 当受试者感到不适或疼痛时，应立即停止使用本设备。
- 如发现本设备有损坏或有故障时，请勿使用。
- 如果设备的两对轮子排列不一致，或当放在水平面上时出现不平衡的情况时，请勿使用本设备。
- 如受试者有以下的情况出现，使用者需要特别注意:
  - 脊柱骨折或曾发生脊柱骨折。
  - 背部皮肤上有伤口。
- 仅在允许无线蓝牙传输的环境下使用本设备。
- 对于携带植入型医疗器械的受试者，在使用本设备前请务必咨询他们的医疗服务提供者。

4. 规格

测量范围（倾斜角）	-90 至 90 度
分辨率（倾斜角）	0.01 度
分辨率（角速度的变化）	0.5度/秒
位移测量分辨率	0.5厘米
连接	蓝芽4.0 (蓝芽低功耗)
电源（不包含电池）	碱性1.5伏特（AAA尺寸）×3
尺寸	200 毫米(宽) x 70 毫米(高) x 82 毫米(深)
重量	325克 (不包含电池)
可搭载的手机宽度	65-78毫米

5. 使用程序

Android应用程序“SpineScan3D” 安装程序
5.1. 本应用程序支援Android 4.3或更高版本
5.2. 可于以下途径安装本应用程序:
  5.2.1. Google Play商店或;
  5.2.2. 使用Android系统手机中的浏览器，浏览本公司网站（www.spinescan3d.com），从下载区下载“SpineScan3D”应用程序。
    5.2.2.1. 确保手机的预设设定允许应用程序从“未知来源”进行安装。
    5.2.2.2. 下载完成后，点击档案进行安装。
    5.2.2.3. 建议在本应用程序安装完成后，关闭手机预设设定中的“未知来源”。
iOS应用程序“SpineScan3D” 安装程序
5.3. 本应用程序支援iOS 8.0或更高版本
5.4. 通过App Store安装软件
  5.4.1. 在IPhone上打开App Store以浏览SpineScan3D App
  5.4.2. 点击应用程序查看应用的产品页面
  5.4.3. 点击“Get” 图标获取应用程序
  5.4.4. 可能需要输入密码才能完成下载和安装

6. 使用前注册

使用者在首次使用前，需完成注册程序。
6.1. 点击在手机上的“SpineScan3D”图标以启动本应用程序。
6.2. 在应用程序界面内，按“注册”键进行注册。
6.3. 在注册界面上，输入以下信息：
  6.3.1. 电邮地址
  6.3.2. 密码
  6.3.3. 所在国家
  6.3.4. 专业 (在下拉列表中选择“医生”或 “护士”)
6.4. 阅读所有条款与准则，并于正方框内点击“接受”。
6.5. 按下“注册”键以确认完成注册。
6.6. 本公司将会发送一个载有激活帐户链接的电邮到阁下已登记的电邮地址。
6.7. 点击电邮中的链接以激活该帐户。
6.8. 使用者可以在成功注册后，登录本公司的应用程序主页。

7. 常规操作程序

7.1. 请确保3粒AAA碱性电池已经正确地安装在设备中（如图示）。
7.2. 使用70%酒精棉片擦拭轮子进行消毒。
7.3. 将手机安装在可延伸的支架上。支架上印有箭头标记，显示延伸方向。使用延伸支架时，请跟随指示方向轻轻拉动支架。
注意：在支架上安装手机时，请避免支架意外地按压手机侧面的按钮。如发生误触，请调整手机在支架上的位置。
7.4. 按下设备上的“电源”键启动设备。
7.5. 当设备正常启动时，红绿LED灯会出现闪烁。 如果电池电量不足，红色LED灯会出现闪烁，提示需要更换电池。
7.6. 在手机上启动“SpineScan3D”应用程序。
7.7. 登录到注册帐号。
7.8. 确保已开启手机蓝牙功能。如果手机的蓝牙功能在关闭模式，请点击“打开” 蓝牙功能，然后点击“允许”。
7.9. 在手机蓝牙界面内点击“连接” ，通过蓝牙将设备与手机连接起来。
7.10. 从手机蓝牙设备列表中选择要配对的设备。 本设备名称的前缀为“SpineS_”，设备名称可在机体上找到标注。
7.11. 当手机与设备的连接建立后，按手机界面上的“扫描”开始扫描。
7.12. 输入受试者数据:
  7.12.1. 对于首次进行量度的受试者:
    7.12.1.1. 于“选择受试者”界面的底部点击“增加新受试者”。
    7.12.1.2. 根据提示输入受试者的相关信息。
    7.12.1.3. 按“储存”创建受试者的记录。
  7.12.2. 对于再访的受试者:
    7.12.2.1. 在搜索框内，输入ID进行搜索。
    7.12.2.2. 在搜索结果列表中，选择该受试者。
7.13. 使用者可选择性地拍下受试者的背部影像，请留意当地对电子记录存储的相关法规。
7.14. 按“开始扫描”进行扫描程序。
7.15. 受试者必须按照应用程序界面所示，做出“向前弯曲姿势”。
7.16. 将设备放置在受试者的近臀部脊柱处，并确保扫描方向正确。
7.17. 按下设备上的“扫描”键开始量度，此时LED会显示及停留在绿色。
7.18. 从髂嵴稳定地把设备沿受试者脊柱的棘突推往颈部的C7。 确保编码器轮子与受试者的皮肤能全面地接触。建议将棘突标记，以确保沿着棘突扫描。
7.19. 设备会实时显示倾斜读数和递增脊柱距离。如在量度过程中检测到异常状况，警告信息会立刻出现。
7.20. 完成量度后，再次按设备上的“扫描”键。此时，绿色LED会出现闪烁。
7.21. 如果在扫描期间侦测到异常状况，警告信息会立刻出现。使用者可以选择“重试”，由步骤7.15开始重覆扫描程序; 或按“继续”储存记录及继续下一个步骤。
7.22. 当应用程序显示“站立姿势”时，受试者应作站立姿势。
7.23. 将设备放在受试者的颈部，确保扫描方向正确及避免初始倾斜。
7.24. 按下设备上的“扫描”键开始量度，此时LED会显示及停留在绿色。
7.25. 稳定地把设备沿受试者脊柱由颈部位置推往臀部脊柱处。确保设备的编码器轮子与受试者的皮肤能全面地接触。
7.26. 扫描后，再次按设备上的“扫描”键完成量度。此时，绿色LED会出现闪烁。
7.27. 如果在扫描期间侦测到异常状况，警告信息会立刻出现。使用者可以选择“重试”，由步骤7.22开始重覆扫描程序; 或按“继续”储存记录并完成量度。
7.28. 应用程序界面会显示扫描摘要（只有“向前弯曲姿势”的量度结果）。 按“返回”回到应用程序的主屏幕。
7.29. 扫描后，受试者可选择填写关于个人脊柱健康的问卷。
7.30. 在扫描下一位受试者前，使用70%酒精棉片擦拭设备的轮子。
7.31. 使用完毕后，关闭设备，从设备上移除手机，并将设备存放在阴凉及干燥的地方。

数据同步

当手机连接到互联网及开启“SpineScan3D”应用程序时，数据将自动同步至云端。确保手机在以下两种情况 1）测量时，或 2) 测量后一周内连接到互联网， 以保证云端数据库中的数据更新。

- 如果测量后超过一周后仍未能进行数据同步，手机界面将会弹出警告信息。

8. 设备状态显示

LED指示灯	指示内容
红灯闪烁	电池电量过低
红绿灯闪烁	蓝牙连接失败
绿灯闪烁	蓝牙连接成功
绿灯长亮	已按下设备上的扫描键，并且正在进行量度

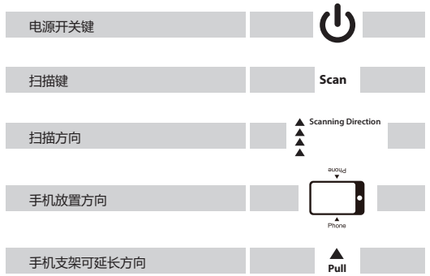
警告信息会在“SpineScan3D”应用程序的界面上弹出（参见第10.2.2节）。

9. 储存条件

- 设备需存放在阴凉干燥处。
- 当设备长时间关闭时，请取出电池。

10. 警告和标签

10.1. SpineScan3D 设备：



10.2. “SpineScan3D”应用程序:
10.2.1. 在扫描摘要中，倾斜角度将会根据角度范围， 以不同颜色表示。

预设范围 [不带正负号度数]	颜色
0.0-2.9	白色
3.0-4.9	黄色
5.0-14.9	红色
> 15.0	红色

10.2.2. 当系统检测到异常时，警告信息会在应用程序的界面中图标 ❗ 旁边出现：

警告说明	建议解决方法
初始弯曲角超出范围 (向前弯曲姿势)	检查受试者的姿势和设备放置的位置。 必要时重试。
初始弯曲角超出范围(站立姿势)	检查受试者的姿势和设备放置的位置。 必要时重试。
设备移动太快 - 超出最高移动速度	重试并减慢设备移动速度。
设备移动太慢 - 没法达到最低要求的移动速度	重试并加快移动速度，确保设备持续测量。
倾斜角度范围 3.0-4.9 [不带正负号度数]	检查受试者的姿势和脊柱。 必要时重试。
倾斜角度范围 5.0-14.9 [不带正负号度数]	检查受试者的姿势和脊柱。 必要时重试。
倾斜角度 > 15.0 [不带正负号度数]	检查受试者的姿势和脊柱。 必要时重试。

11. 维修及保养

使用者不可自行或要求任何第三方修理或修改本公司的设备。如果本公司的设备或其应用程序不能正常运作，请联络Avalon SpineCare (HK) Limited。

12. 弃置

请联络Avalon SpineCare (HK) Limited安排回收设备。

13. 条款与准则

使用者同意本设备仅授权给遵守本使用说明书规定的使用者使用。此外，使用者必需确认本设备仅用于研究目的而不作出售。同时，使用本设备不等于在受试者身上用作出任何医疗诊断或提供任何医疗上的专业建议。使用者亦需同意遵守其所在的本地法规使用本设备。

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使用者明确地确认并同意使用本设备的风险由使用者一方承担。本设备，包括硬件，软件和相关文件是“按原样”提供而不会提供其他形式的保养。Avalon SpineCare（HK）Limited明确表示不承担任何包括但不限于与特定用途适用性相关之明示或暗示的保养。Avalon SpineCare（HK）Limited不保证出厂设备中的功能（包括硬件和软件）不会中断或没有错误，或者该缺陷能够被本公司修正。此外，Avalon SpineCare（HK）Limited不保证设备使用的正确性，准确性，可靠性或其他方面的结果或相关之任何陈述。Avalon SpineCare（HK）Limited（包括但不限于董事，雇员或代表）之口头或书面信息或建议并不构成任何担保或保修范围之扩大。如果设备出现故障，使用者可联系Avalon SpineCare（HK）Limited安排所需要的服务、维修或更正。Avalon SpineCare（HK）Limited不保证在系统和设备更新后，所有的功能，优点和特性保持不变。使用者了解并同意Avalon SpineCare（HK）Limited可自行决定更改设备的任何特性，亦同意Avalon SpineCare（HK）Limited可自行决定终止或修改本设备的特性及任何功能，而不作另行通知。

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