An infant sleep pod for maintaining an infant’s orientation relative to a sleeping surface includes a pouch portion for receiving an infant having a front and a back and left and right sides, and sleeves or arm holes on said left and right sides; a pair of connection points on the pouch portion on said left and right sides, each at a location cephalic to, i.e. above, an armpit location defined by the sleeves or arm holes; and a retaining section including a strap and being detachably connected to said connection points wherein, in use, when the strap is minding along a left/right direction and the retaining section is secured with respect to the sleeping surface by passing around or encircling the sleeping surface, the orientation of the pouch portion is substantially fixed relative to the sleeping surface, such that the front of the pouch portion may not face the sleeping surface, whereby the sleeves or arm holes retain an infant in the pouch portion such that the infant is inhibited from turning within the pouch portion such that the infant faces the back of the pouch portion.
Fig. 9
INFANT SLEEP POD

[0001] This invention relates to a sleep pod for an infant, a strap for use with the sleep pod and a kit including the sleep pod and strap. More particularly, the invention relates to a sleep pod, strap and kit for reducing the risk of cot death.

BACKGROUND

[0002] Cot death, also known as sudden infant death syndrome, describes the sudden and unexplained death of an infant. The risk of cot death is greatest during the first six months after birth, but is present for up to two years and occasionally after this. No single cause of cot death has been identified, but experts recommend a number of measures to reduce the risk of cot death occurring. These measures include placing the infant on their back to sleep and keeping the baby’s head uncovered during sleep. According to AIMS (Association for Improvements in Maternity Services) journal (2003) there was a 40% reduction in cot death in the Netherlands following the introduction of the ‘back to sleep’ campaign to encourage placing babies so that they sleep on their backs.

[0003] At around 5-6 months it is common for babies to be able to roll on their fronts at night, increasing the risk of cot death, even when the baby has initially been placed on their back.

[0004] To reduce the likelihood of movement resulting in bedding covering the infant’s head during sleep, a baby sleeping pod is known. Baby sleeping suits and similar devices are also often referred to as baby sleeping bags, sleeping suits, etc. Typically these devices resemble sleeping bags and are arranged to retain a baby such that the baby is restricted from moving into or out of the suit, for example by providing arm holes or sleeves. When the baby’s arms are placed in the arm holes or sleeves, movement by the baby further into or out of the sleeping suit is prevented. A similar result may be achieved by other means, such as a suitable sized collar portion. The sleeping suit, when in use, cannot cover the baby’s head, and as no additional bedding is needed it is possible to ensure that bedding does not cover the baby’s head.

[0005] As babies become more mobile they may place their arms and legs in the spaces between the cot bars, which can lead to injury. They can also bang their heads on the cot bars.

[0006] To address this problem, it is known to provide cot bumpers, which attach to the cot bars and provide a padded surface over the portion of the cot bars that the baby is likely to come into contact with.

[0007] When using a cot, it is necessary to bend over the bars/rail to pick up and put down the baby. This can lead to strain on the back of the person moving the baby, leading to possible back pain or damage to the back. Furthermore, cots can take up a large amount of space and are a semi-permanent installation. Cots are not generally portable, and even travel cots can be cumbersome. Moreover, cots are relatively expensive. A transitional period from cot to bed as an infant grows may cause distress in the infant due to the unfamiliar change in surroundings.

BRIEF SUMMARY OF THE DISCLOSURE

[0008] An aspect provides an infant sleep pod for maintaining an infant’s orientation relative to a sleeping surface, the sleep pod comprising a pouch portion for receiving an infant, the pouch portion having a front and a back; a connection portion arranged to connect to a retaining section such that in use: the back of the pouch faces a sleeping surface, the connection portion is connected to the retaining section, the retaining section is secured relative to the sleeping surface, the orientation of the pouch portion is substantially fixed relative to the sleeping surface by the retaining section, such that the front of the pouch portion may not face the sleeping surface, and the connection portion is connected to the pouch portion cephalic to the amnion of the infant.

[0009] In use the connection portion may be connected to the pouch portion behind the shoulders of the infant.

[0010] The connection portion may include connection members for attachment to the retaining section, the connection members being located to the left and right of the infant, respectively.

[0011] A further connection portion may be connected to the pouch portion, the further connection portion for connection to a further retaining section. In use the further connection portion may be substantially level with a waist of the infant.

[0012] The connection portion may include a pair of connection members for connection to the retaining section, the further connection portion includes a pair of further connectors for connection to the further retaining section, and the pair of connectors is of a different type from the pair of further connectors.

[0013] A strap for use with the infant sleep pod may be provided, the strap may comprise: the retaining section, including a first strapping section; the further retaining section, including a second strapping section, and a linking section linking the retaining section with the further retaining section.

[0014] A kit may comprise: the infant sleeping pod; and the retaining section.

[0015] The kit may comprise the strap.

[0016] The kit may further comprise an additional strap, the additional strap may further comprise an alternative retaining section, wherein the alternative retaining strap is longer than the strap.

[0017] According to one aspect an infant sleep pod for maintaining an infant’s orientation relative to a sleeping surface, the sleep pod comprises: a pouch portion for receiving an infant, the pouch portion having a front and a back; a connection portion arranged to connect to a retaining section such that in use: the back of the pouch faces a sleeping surface, the connection portion is connected to the retaining section, the retaining section is secured relative to the sleeping surface, and the orientation of the pouch portion is substantially fixed relative to the sleeping surface by the retaining section, such that the front of the pouch portion may not face the sleeping surface.

[0018] In use the retaining section may apply tension to the connection portion. In some embodiments, when in use the retaining section applies only tension to the connection portion or to the pouch portion. In some embodiments, in use, the infant is not located between the retaining section and the sleeping surface.

[0019] The infant sleep pod may further comprise the retaining section. The connection portion may include at least one non-slip surface, arranged to resist movement parallel to the sleeping surface when in use. The connection portion may be arranged to encircle at least one of a mattress, bed base, cot base or cot bar. The retaining section may include a main strap and at least one secondary strap, wherein the main strap is
arranged to encircle the sleeping surface when in use, and the at least one secondary strap is arranged to connect the main strap to the connection section.

0020 The secondary strap may be at least one of: unseparable from the main strap, separable from the main strap, connected to the main strap by a connection moveable relative to the main strap, connected to the main strap by a connection immovable relative to the main strap.

0021 The connection portion may be irremovably attached to the retaining section. The connection portion may include first and second connection points, and the first connection point may be irremovably attached to the retaining section and the second connection point may be detachably attachable to retaining section.

0022 The connection portion may be detachably connectable to the retaining section. The retaining section may be arranged to permit disconnection of the connection portion from the retaining section while the retaining section remains secured relative to the sleeping surface.

0023 The connection portion may include two connection points for connection with the retaining section. The connection points may be located either side of the infant when in use. The connection points may be attached to the back of the pouch, either side of a center line of the pouch. A distance between the two connection points measured along the back of the pouch may be less than a distance between the two connection points measured along the front of the pouch.

0024 In some embodiments, in use, tension applied to the pouch portion by connection to the retaining section does not cause pressure to be applied to an infant in the pouch portion. In some embodiments, in use, tension applied to the retaining section does not cause tension to be applied to the pouch portion.

0025 The connection portion may be to one or both sides of the infant when the infant is received in the pouch portion.

0026 The pouch may include a pair of sleeve portions for respectively receiving the infant’s arms. The pouch may include a pair of legging portions for respectively receiving the infant’s legs.

0027 The connection portion may include at least one of: a clip, a side release clip, a buckle a carabiner-type device, double D or O rings.

0028 Another aspect provides a mattress for use with the sleep pod, wherein the retaining section is secured to the mattress. The retaining section may be irremovably secured to the mattress. The retaining section may include a pair of straps. The pair of straps may have each a connector arranged to connect to the connection portion. The pair of straps may each have a connector arranged to connect to each other.

0029 Aspects and embodiments of the invention are directed to solving one or more of the shortcomings of known devices.

BRIEF DESCRIPTION OF THE DRAWINGS

0030 Embodiments of the invention are further described hereinafter with reference to the accompanying drawings, in which:

0031 FIG. 1 is a plan view illustrating an embodiment of an infant sleep pod.

0032 FIG. 2 illustrates the embodiment of FIG. 1 in use in a cot.

0033 FIG. 3 illustrates an arrangement useable with the embodiment of FIG. 1.

0034 FIG. 4 illustrates the embodiment of FIG. 1 viewed along direction A.

0035 FIG. 5 illustrates another embodiment.

0036 FIG. 6 illustrates another embodiment.

0037 FIG. 7 illustrates a further embodiment.

0038 FIG. 8 illustrates an arrangement usable with the embodiment of FIG. 7.

0039 FIG. 9 illustrates a further embodiment.

0040 FIG. 10 illustrates an arrangement usable with the embodiment of FIG. 9.

0041 FIG. 11 illustrates an embodiment of a mattress.

0042 FIG. 12 illustrates a further embodiment of an infant sleep pod.

0043 FIG. 13 illustrates a strap for use with the infant sleep pod of FIG. 12.

DETAILED DESCRIPTION

0044 Herein, the term sleep pod is used interchangeably with the term sleep suit to refer to sleep suits, sleep pods, baby sleeping bags, and similar devices. Herein the term infant and baby are used interchangeably to refer to a child of an age at which a sleep suit may be beneficially used. For example, less than two years of age.

0045 FIG. 1 shows a baby sleep suit according to a first embodiment of the invention. According to this embodiment, a baby sleep suit has a pocket portion or pouch portion 100 forming a pouch in which an infant may be placed. The pouch 100 has at least a hole 115 arranged such that, when an infant is placed in the pouch 100, the infant’s head 132 extends outside of the pouch 100 and the infant’s torso is retained inside the pouch 100. The infant’s legs may be retained inside the pouch within the same pouch portion as the torso. Legging portions may be provided to respectively receive the infant’s legs. The legging portions may be leg holes that do not extend along the legs, or may include trouser portions that extend part way or completely along the length of the legs. The trouser portions may be closed at the foot end, to completely enclose the legs and feet. Optionally, as in the embodiment of FIG. 1, the pouch 100 may also have sleeves 120 for receiving the infant’s arms 135. FIG. 1 illustrates a sleep suit having short sleeves 120, but in some embodiments the sleep suit may include long sleeves, or arm holes without sleeves. Where long sleeves are provided they may be closed at the distal end, such that the infant’s hands may not protrude, or may be open at the end, such that the infant’s hands may protrude. Where no sleeves are provided, arm holes may be produced by straps that fasten over the infant’s shoulders. Other possibilities would be evident to the skilled person.

0046 The sleep suit of the current embodiment is used with a retaining section 150. In the embodiment of FIG. 1, the retaining section 150 includes a strap 152 having a male side release clip (also known as a side release buckle) 155 at each end.

0047 The pouch portion 100 includes a connection portion having one or more connection points 160a, 160b for connecting the pouch 100 to the retaining section 150. In the embodiment of FIG. 1, the connection portion includes a pair of female side release clips arranged to releasably engage the male side release clips 155 of the retaining section 150. The connection portion of FIG. 1 includes a pair of connection points 160a, 160b each arranged to connect to the retaining section 150. The connection points 160a, 160b are located at opposite sides of the pouch 100, such that when an infant is
correctly placed in the pouch 100 the connection points 160a, 160b are located to either side of the infant (i.e. to the infant’s left and right).

[0048] FIG. 1 shows male and female side release clips of the retaining section 150 and the connection portion, respectively, in a detached state. FIG. 3 shows the side release clips of the retaining section and the connection portion in more detail.

[0049] FIG. 4 shows the arrangement of FIG. 1 viewed along direction A, with the male and female side release clips of the retaining section 150 and the connection portion, respectively, in an attached state. In use, the retaining section 150 is placed around a mattress 170 and connected to the connection points 160a, 160b. In this arrangement, the sleep suit is retained on a sleeping surface 172. In the sleeping surface is used to denote a surface on which the sleep suit is positioned, and is a surface suitable for placing an infant for sleep. In the example of FIGS. 1, 2 and 4, the sleeping surface 172 is the upper surface of mattress 170. In the arrangement of FIG. 4, the orientation of the sleep suit is fixed relative to the sleeping surface 172 by the retaining section 150 such that the back of the sleep suit faces the sleeping surface 172 and the front of the sleep suit, i.e. the portion of the sleep suit substantially opposite the back of the sleep suit, is prevented from facing the sleeping surface 172.

In a preferred embodiment, the front and back of the sleep suit are different and are arranged such that the infant faces toward the front of the sleep suit when correctly placed in the sleep suit. However, the front and back may be identical, with the assignment of front and back being determined by usage.

[0050] In preferred arrangements, the sleep suit is arranged such that tension applied to the connection portion does not lead to pressure being applied to the infant when the sleep suit is in use. For example, as shown in FIG. 4, connection points 160a, 160b may be arranged such that the portion of the pouch 100 at the back of the sleep suit has a shorter distance between the connection points 160a, 160b than the front, such that the separation between the connection points 160a, 160b is limited by the width of the back portion of the pouch 100 between the connection points 160a, 160b. This results in tension applied to the pouch 100 via the connection points 160a, 160b being transmitted through the back of the pouch 100, such that pressure is not applied to the contents of the pouch 100. Other arrangements are possible. Where tension is preferably applied to the sleeping suit via the connection portion, the tension is transmitted below the pouch, i.e. between the contents of the pouch and the sleeping surface.

[0051] The connection points 160a, 160b may be linked to each other by strapping (webbing may be used as strapping) at the back of the pouch, such that tension applied to the connection points 160a, 160b is transmitted along the strapping. This may prevent damage to the pouch 100 when high tension is applied to the connection point 160a, 160b, and also avoids pressure being applied to the contents of the pouch 100. The strapping may be a continuous length between the connection points 160a, 160b, to avoid possible weakness associated with a join in the strapping. The strapping may be fixed horizontally (e.g. running left to right from the point of view of an infant in the pouch 100) to the back of the pouch 100. Reinforcement may be provided where the strapping is connected to the pouch 100, for example by providing strapping running in a substantially top to bottom direction on the pouch 100 connected to both the pouch 100 and the horizontal strapping, so as to increase the area of the pouch 100 to which the strapping is connected and reduce the likelihood of damage to the material of the pouch 100 due to pulling between the pouch 100 and the strapping, e.g. due to movement of an infant when the sleep pod is in use.

[0052] Preferably the strap 152 is adjustable, to allow the strap 152 to be pulled tight around the mattress to facilitate secure fixing of the sleep suit relative to the sleeping surface 172, and to allow for variations in the size of the mattress 170. The strap 152 may include a tri glide or three bar slide, this may be used to reduce the likelihood of the strap 152 becoming loose after it has been adjusted to fit the sleeping surface.

[0053] According to the present embodiment, when the sleep suit is in use, the infant is prevented from turning onto their front, since the sleep suit is prevented from moving such that the front of the sleep suit faces the sleeping surface, and the infant is retained in the sleeping suit (for example by the sleeves or arm holes) such that they are unable to rotate relative to the sleep suit such that the infant faces the back of the sleep suit.

[0054] Preferably, the sleep suit is arranged such that when in use in a cot 190, the infant is prevented from moving to its left or right, such that when the infant is placed in the cot, the infant is prevented from moving closer to the sides of the cot 190. Accordingly, this may prevent the infant from banging his head on the cot bars 195, or from placing its arms and/or legs through the cot bars 195. This may reduce the risk of injury to the infant and remove the need for cot bumpers.

[0055] Preferably, the strap 152 is provided with a non-slip surface, such as a rubberized layer, for contact with the back and/or side portions of the mattress 170. This may reduce the likelihood of the pouch 100 moving towards the head or foot end of the mattress 170, (i.e. in a direction perpendicular to the strap 152 and the loop formed by the strap 152) due to movement of the strap 152 relative to the mattress 170. It may also reduce the likelihood of the pouch 100 moving toward the sides of the mattress 170 (to the infant’s left/right) due to movement of the strap 152 relative to the mattress 170 along the direction of the strap 152.

[0056] The retaining section 150 of FIG. 1 may be completely disengaged or detached from the pouch 100. In some arrangements, this may permit the sleep suit (and the infant) to be removed from the cot 190, mattress 170 or sleeping surface 172 without removing the infant from the sleep suit, and without requiring the retaining section to be disengaged from the cot 190, mattress 170 or sleeping surface 172.

[0057] FIG. 5 illustrates a variation of the embodiment of FIG. 1. According to this embodiment, the connection portion 160 includes a loop 260a, 260b at each of a pair of connection points. Loops 260a, 260b may be loops of fabric, metal or plastic. The material is not particularly limited. The retaining section 250 includes strap 252, arranged to pass through the loops 260a, 260b, as shown in FIG. 5. The retaining section may also include press studs 255, attached to the strap 252, the press studs arranged such that the ends of the strap 252 may be double fixed and fixed to the strap to form a pair of closed loops that respectively link with loops 260a, 260b.

[0058] Other arrangements for attaching the retaining section 150 and the pouch 100 are possible, as would be understood by the skilled person.

[0059] FIG. 6 illustrates a variation of the embodiment of FIG. 1. According to this variation, the pouch includes individual leg portions 120a, each arranged to receive one of the infant’s legs. This embodiment also includes long sleeves 120a. The pouch 100 of this embodiment is illustrated with a
front closure 107, which may be implemented using a hook and loop fastening or a zip for example.

[0060] In a variation of the above embodiments, the retaining section is integral with the sleep suit. For example, by replacing one each of the male and female side release clips of FIG. 1 with a permanent attachment between the pouch 100 and the retaining section 150. In an example according to this variation, the retaining section includes a strap 152 with a male side release clip at a first end, the second end of the strap 152 being attached permanently to the pouch 100. In this case, the connection portion includes a female side release clip at a first connection point 160a for engaging with the male side release clip of the connection portion, and a connection point 160b, substantially on an opposite side of the pouch 100 to connection point 160a, irreversibly attaching the strap 152 to the pouch 100, eg by stitching or by being integrally formed. This arrangement includes fewer parts, and so is expected to be less expensive to produce.

[0061] FIG. 7 shows an example of a further embodiment. In the embodiment of FIG. 1, when the pouch 100 is detached from the retaining section 150, the retaining section is no longer secured to the mattress 170. According to the present embodiment, the retaining section 750 is arranged such that the pouch 100 may be removed from the retaining section 750 while the retaining section 750 remains secured to the mattress 170. This may reduce the need to adjust the length of the strap of the retaining section when attaching or removing the sleep suit.

[0062] In the embodiment of FIG. 7, securing the retaining section 750 to the mattress 170 is independent of an attachment between the retaining section 750 and the sleep suit. This can ensure that no tension is applied to the pouch 100 of the sleep suit due to securing the retaining section 750. Where the retaining section is pulled tight around the mattress, it is possible to avoid the exertion of retightening the retaining section 750 each time the sleep suit is placed on the sleeping surface 172 and attached to the retaining section 750.

[0063] According to the embodiment of FIG. 7, the retaining section includes a strap 752 having a buckle 753 at one end. The opposite end of the strap 752 is arranged to mate with or couple to the buckle 753 to form a closed loop. Preferably the buckle 753 is arranged such that the loop may be adjusted to change the size of the loop. In use the strap 752 of the retaining section 750 is placed around and secured to the mattress 170 as shown in FIG. 7.

[0064] The retaining section includes an attachment section 757, attached to the strap 752 of the retaining section and attachable to connection portion 160. In the embodiment of FIG. 7, the attachment section 757 includes a pair of secondary straps 754, each attachable with respective connection points 160a, 160b. Where the connection points include female side release clips, the secondary straps may each be provided with male side release clips 756 for engaging with the female side release clips.

[0065] Each attachment section 757 may be permanently and fixably attached to the strap 752, for example by stitching. Alternatively, a connection between each secondary strap 754 and the strap 752 may be movable. For example, secondary strap 754 may include a collar 755 that is connected to and moveable along strap 752. Preferably, in this case, press studs or other fixing means are provided on the collar 755, with corresponding studs or complementary fixing means on the strap 752. This enables the collar 755 to be fixed relative to the strap 752, to limit movement of the pouch relative to the strap 752. The collar may be freely moveable along the strap when the press studs or fixing means are not engaged.

[0066] FIG. 8 illustrates an attachment section 757 in more detail. One or more press studs 758 are provided on the face of the strap 752 facing the sleeping surface 172, and complementary studs 759, for connection to the press studs 758, are provided on the interior of the collar, so as to face and be engageable with the press studs 758 of the strap 752. By placing the press studs on the underside of the strap 752 (i.e. the on the face of the strap facing the sleeping surface) it is ensured that the press studs cannot be disengaged by pulling on the secondary strap 754, since tension on the secondary strap will tend to pull the collar so as to place the press stud 758 and stud 759 more firmly into engagement. As a result of this, it is not possible for the infant to disengage the press studs 758, 759 by moving while the sleep suit is in use. In some examples the secondary straps 754 are separate from the strap 752, and may be connected to strap 752 by some connection means (using respective complementary clips on the strap 752 and secondary strap 754, for example) or the secondary strap may be arranged to form a closed loop around strap 752.

[0067] In an alternative arrangement to that of FIG. 7, the secondary strap 754 may be permanently attached to the connection portion, or may form part of the connection portion, of the sleep pod and detachably connectable to the strap 752.

[0068] Preferably, when the strap 752 is secured to a mattress, the tension of the strap 752 causes the strap 752 to sink into the mattress 170, such that the strap 752 does not protrude from the surface of the mattress 170, and preferably is flush with the surface of the mattress. Whereby, the strap 752 does not cause discomfort to the infant during use. In some embodiments, additional padding may be provided in or around the pouch 100 in the region of the pouch 100 that is in contact with strap 752 when in use. In some embodiments, padding is provided over the whole of the back of the pouch 100.

[0069] According to the embodiments of FIGS. 7 and 8, tension applied to the strap 752 does not cause tension to be applied to the pouch 100. Accordingly, the strap 752 may be securely fastened to a mattress 170 while avoiding any tension being applied to the pouch 100. This may permit some degree of movement of the pouch 100, possibly increasing the comfort of the infant, even when the strap 752 is securely fixed to the mattress 170.

[0070] The above embodiments have been illustrated (e.g. in FIG. 2) in use with a cot 190. Typically a cot is 190 s surrounded by cot bars 195 and/or cot walls to ensure that the infant does not fall from the mattress 170 and is unable to move away from the mattress 170.

[0071] According to preferred embodiments, the sleep suit is arranged to prevent an infant from moving a significant distance relative to a sleeping surface 172, and so in these embodiments, the cot bars 195 are redundant. Thus, according to some embodiments, cot bars 195, and indeed the cot 190 itself, are unnecessary, and only a mattress 170 (or other suitable surface) need be used with the sleep suit. This has potential advantages of reduced cost and space, easier access for placing and picking up the infant (e.g. reducing the strain on the back of the person lifting the infant), and improved portability and storage.

[0072] The transition from cot 190 to bed may lead to stress in some infants. According to embodiments of the invention,
a bed may be used from birth, and in such cases there is no transition from cot 190 to bed.

[0073] Preferred embodiments may be used both with and without a cot 190. In some cases use of a cot 190 may be desirable, for example the cot bars 195 may desirably provide separation between the infant and a pet dog.

[0074] Some of the above embodiments include a strap 152 that passes around or encircles a mattress. In alternative arrangements, the strap 152 may be arranged to pass around the cot base 197 or frame, where the cot base 197 is the portion of the cot arranged to support the mattress 170 or equivalent. In embodiments that may be used with a standard bed, strap 152 may encircle a bed base (i.e. a portion of the bed for supporting a mattress). Herein, bed base is used to include cot base 197.

[0075] FIG. 9 shows a further embodiment. According to this embodiment, the retaining section includes two retaining members 950 (only one is visible in FIG. 9). Each retaining member 950 is arranged to be secured to one of the cot bars 195 and to the connection portion of the sleep suit. In the embodiment illustrated in FIG. 9, the connection portion includes a pair of fabric loops at connection points 160a, 160b (only one of which is visible in FIG. 9), as described above in relation to FIG. 5, although other arrangements are possible.

[0076] The retaining member 950 includes a strap 952 and at respective ends of the strap 952 is provided a male side release clip 955 and a female side release clip 955 which may be mutually engaged to form strap 952 into a closed loop. The strap 952 is arranged to pass around one of the cot bars 195, through the loop of the connection portion, and thereby connect the pouch 100 to the cot bar 195. This arrangement is shown in more detail in FIG. 10. The strap 952 is preferably adjustable, so that the length of the strap or the size of the loop may be controlled.

[0077] By connecting both sides (left and right sides from the point of view of an infant in the pouch 100) of the pouch 100 to the cot bars 195 (via connection points 160a, 160b and retaining member 950), the maximum distance that each side of the pouch 100 is able to move away from each side of the cot 190 (defined by the location of the cot bars 195) is limited. By appropriately controlling the maximum distance of each side of the pouch 100 from the cot bars 195, it is possible to ensure that the pouch 100 may not be turned over (in a left hand direction) such that 0 in front of the pouch 100 may not face the sleeping surface 172.

[0078] Provided the maximum distance between the cot bars 195 and each side of the pouch 100 may be controlled, the form of the retaining member 950 and connection portion 160 is not particularly limited.

[0079] According to one embodiment, in use, a strap of one of the retaining members 950 is passed through a loop on the side of the sleep suit, around a cot bar 195 and then the ends of the retaining member 950 are connected to form a closed loop encircling both the cot bar 195 and the loop of the sleep suit. This is repeated with a second retaining member 950, such that it is passed through a loop on the other side of the sleep suit and a second cot bar 195, and is then closed. The retaining members 950 may then be tightened, such that the pouch 100 of the sleep suit cannot be turned over (i.e. the front of the pouch is prevented from facing the sleeping surface 172).

[0080] The cot bars 195 provide a convenient anchor that is essentially fixed relative to the mattress 170 (and the sleeping surface 172), such that the retaining member(s) 950 may be secured relative to the sleeping surface 172. Other anchors could also be used for securing the retaining member(s) 950 relative to the sleeping surface 172, depending on the sleeping surface 172 and its surroundings.

[0081] In a variation of the embodiment shown in FIGS. 9 and 10, each side of the sleeping pod has a connection point 160a, 160b including a female side release clip. A pair of retaining members are provided, each including a strap 952 with a male side release clip at one end. Each strap 952 may include two lengths of strapping connected to the clip (the two lengths of strapping may be integral or separate). One length of strapping may have a double D or O ring for engaging with the other length of strapping, such that a loop may be formed around the cot bars 195.

[0082] According to another variation, the strap 952 includes a male side release clip for engaging with a connection point 160a, 160b of the sleep suit, a buckle or similar means for adjusting the length of the strap, for example by connecting two portions of the strap at variable points along the length of one or both portions, and a loop forming section, able to form a loop around one or more cot bars. Preferably the size of the loop is adjustable. An example of the loop forming section includes complementary male/female clips, one attached at an end of the strap and the other attached close to the end of the strap, such that connection of the clips forms a loop at one end of the strap sized to encircle a cot bar. According to some variations, the cot bar 195 is encircled by a loop and connection of the retaining member 150 to the sleep suit is independent of the loop encircling the cot bar 195. Moreover, the retaining member 150, in use, may have a loop for connection to a cot bar 195 and an attachment portion (possibly including a loop) for attaching to connection point 160a, 160b. The loop and the attachment portion are linked by an intermediate portion of the retaining member 150, and the intermediate portion is not part of, and does not form a loop. This has the advantage of reducing the likelihood of the infant becoming tangled in the retaining portion, as it is possible to avoid a strap forming a closed loop between the cot bar 195 and the sleep suit, which could trap an arm of the infant, for example.

[0083] Connection of the connection portion to the retaining section 150 results in the pouch being secured relative to the sleeping surface 172, such that the orientation of the pouch portion 100 is substantially fixed relative to the sleeping surface 172 by the retaining section 150, such that the front of the pouch portion 100 may not face the sleeping surface 172.

[0084] In preferred embodiments, the retaining section 150 applies tension to the connection portion 160. In this manner, the retaining section 150 does not apply force directly to the infant, and the movement of the infant is limited by the pouch 100 of the sleeping pod. Thus, the retaining section 150 limits the movement of the infant, and applies force to the infant, only via the pouch 100 of the sleeping pod. Preferably, in use the infant is not located between the retaining section 150 and the sleeping surface 172.

[0085] The connection portion 160 may include a pair of connection points 160a, 160b to the left and right of a centre line of the pouch 100 of the sleeping pod. The connection points 160a, 160b may be substantially on the left and right of the infant when the sleep pod is in use. Preferably, the connection points 160a, 160b are connected to the pouch 100 toward a rear portion of the pouch 100, such that tension applied to the connection points 160a, 160b is not transmitted
via the front of the pouch 100. Herein references to left and right are from the point of view of an infant placed in the pouch 100 of the sleep pod.

[0086] In the above examples the sleeping surface 172 is the top surface of a mattress 170, any surface suitable for supporting an infant during sleep may be used. Preferably, the surface is cushioned, but in some embodiments, cushioning is provided at a back portion of the sleep suit. Where a mattress 170 is used, it may be a cot mattress, a travel mattress, inflatable mattress, or standard mattress, and may be any standard or non-standard size (e.g. single, double, queen size, king size, etc.). Where the retaining section 150 is attached directly to the mattress, for example by encircling and gripping the mattress 170, the retaining section 150 is preferably arranged to be adjustable for use with different sizes of mattresses 170. Embodiments having non-integral retaining sections 150 may be more easily adapted to various sizes of mattresses 170. Where specific reference has been made to male or female connectors, this is for example only, and the connectors may be reversed (such that a male connector is provided in place of the female connector, and vice-versa).

[0087] According to preferred examples, no loose bedding (such as a blanket) is needed in addition to the sleep suit. This can ensure that bedding is not pulled over the infant’s head, whereby the risk of suffocation is reduced.

[0088] Another aspect of the present invention includes a mattress 175 having an integral retaining section 150. Here integral includes connection by any non-separable attachment. The retaining section 150 is arranged to act as the retaining section 150 of any previous embodiment, and may include one or more portions. The retaining section 150 of this aspect is preferably arranged so as not to interfere with sheets that are fitted to or tucked under the mattress, and such that a portion of the retaining means for 150 connection with the connection portion of the sleep suit may rest above sheets fitted to the mattress 175.

[0089] FIG. 11 shows an embodiment in which the retaining means includes a pair of straps 152. The straps 152 are attached to an underside of the mattress 175 sufficiently distant from the edges of the mattress 175 that the straps 152 do not interfere with sheets tucked under or fitted to the mattress in a conventional manner. Preferably, the straps 152 are each positioned approximately half way along the length (longest dimension) of the mattress, and preferably at the same position along the length. In some embodiments, a single strap 152 may have a central part attached to mattress 175, the free ends of the strap 152 acting as the two straps 152 illustrated in FIG. 11.

[0090] According to the embodiment of FIG. 11, each strap of the retaining section 150 has a male side release clip 155 for engaging with a respective female side release clip of the connection portion 160 of the sleep suit.

[0091] In an alternative embodiment, one of the straps 152 may have a male side release clip and the other of the straps 152 may have a complimentary female side release clip, such that the straps 152 may be secured to each other across the top of the mattress. The sleep suit may then be attached to the straps 152 along the lines described in relation to FIGS. 7 and 8 and variations thereof. In this case, it is preferable that, when the male and female side release clips of the straps 152 are engaged with the straps secured on top of the mattress 175, that the side release clips are at the side of the mattress or away from the centre of the mattress (for example by making the straps 152 of different lengths). Accordingly, when the straps 152 are connected, the side release clips are not under the pouch 100, which avoids discomfort due to the infant laying on the clips.

[0092] The inventors have found that in some arrangements, as the infant becomes more mobile, the infant may twist within the pouch 100, essentially about the infant’s vertical axis (i.e. the axis defined by the intersection of the sagittal and frontal planes). This may permit the infant to lay on their front, which is undesirable. In some cases, the twisting may be sufficient to allow the infant twist out of the pouch entirely. If this occurs when the pouch is used without cot bars or equivalent (e.g. on a bed), there is a risk of the infant falling from the bed and being injured.

[0093] The inventors have found that this can be prevented by limiting the degree of twisting, or rotation, that the infant can perform, particularly relative to the location(s) on the pouch 100 at which a connection to the connection portion is provided. The inventors further found that the twisting involved the infant lifting one shoulder, and that the lifting of the shoulder, and the resulting twisting relative to the sleep pod, may be prevented by providing the attachment of the pouch 100 to the connection portion 160 cephalic to (i.e. above with respect to the orientation of the infant) the armpit. In particular, positioning the portion 160 level with the shoulders resulted in a significant difference in the mobility of the infant, and was found to prevent the infant twisting relative to the sleep pod. Herein, references to shoulder relate to the shoulder joint, rather than, for example, the scapula. Positioning the connection portion 160 level with the shoulder may refer to an arrangement in which a location on the pouch 100 at substantially the same perpendicular distance from the transverse plane as the shoulder provides a connection between the pouch 100 and the connection portion 160, the connection being placed under tension by movement of the pouch 100 relative to the connection portion 160.

[0095] In some arrangements, the pouch 100 may provide a connection to the connection portion 160 substantially behind the infant’s shoulder. In embodiments having sleeves, the infant’s shoulder can be more reliably controlled by the sleep pod.

[0096] The inventors further discovered that, as the infant grew, the infant may be able to reach cot bars with their feet and "walk" along the cot bars. This can result in twisting of the infant within the cot about an axis substantially perpendicular to the sleeping surface (the sagittal axis) and may allow the infant to roll over into a less safe position (e.g. onto their side or front). Furthermore, this may also allow the infant to twist out of the sleeping pod in some cases.

[0097] Surprisingly, if was found that when the sleeping surface is a single bed or single mattress against a wall, the infant was able to use the wall in a similar manner to cot bars to “walk” into a twisted position. This is more likely when the connection portion 160 connects with the pouch 100 cephalic to the armpit, when compared with a connection portion 160 level with or caudal to the armpit. The infant can pivot more easily about an axis perpendicular to the sleeping surface when the connection portion 160 is cephalic to the armpit, and can reach further to the sides by pivoting.

[0098] According to some embodiments, an example of which is shown in FIG. 12, a second, or further, connection portion 1260 is provided, and this may be connectable with a second retaining section 1250. The second connection portion 1260 and second retaining section 1250 may be similar to
the connection portion 160 and retaining section 150 described above. This arrangement helps to limit pivoting of the infant about an axis perpendicular to the sleeping surface, and is particularly beneficial when the first connection portion 160 is cephalic to the armpit.

[0099] The second connection portion 1260 may be caudal to the first connection portion 160. The second connection portion 1260 may connect with the pouch 100 substantially in the region of the infant’s hips or waist. This prevents excessive pivoting of the infant about an axis perpendicular to the sleeping surface while producing little or no impediment to the freedom of movement of the infant’s legs, such that the infant may move their legs in a comfortable manner.

[0100] In embodiments intended for use with first 150 and second 1250 retaining sections, use of only one retaining section would introduce the risk of the infant twisting onto their side or front or twisting out of the pouch 100 completely. In order to reduce the likelihood of a user using only a single retaining section, for example if a retaining section is lost, an aspect of the invention provides a strap, as shown in FIG. 13. The strap includes the first 150 and second 1250 retaining sections, and a linking section 1310. The linking section 1310 links the retaining sections 150, 1250. The retaining sections 150, 1250 may be respective lengths of strapping, and the linking section 1310 may be flexible and may be a piece of fabric. The strapping and fabric may be attached by stitching. In FIG. 13 the linking section 1310 is continuous, but may also be provided in two or more discreet parts. The linking section may be embodied by one or more lengths of strapping running between the retaining sections and substantially perpendicular thereto. The linking section permanently connects the retaining sections, such that it is unlikely that only one retaining section will be used.

[0101] The inventors have found that where only one retaining section is used cephalic to the armpit and the sleeping surface is sufficiently large that the infant’s legs are unable to reach a vertical surface at the side of the sleeping surface, for example when the infant is placed at the middle of a double bed and cannot reach a wall with their legs, the infant is unable to “walk” along the vertical surface to pivot about the axis perpendicular to the sleeping surface. Accordingly, the degree of pivoting is not problematic, and the infant is unable to twist onto their side or front, or to twist out of the pouch 100. Accordingly, only one retaining member is needed when the sleeping surface is large. A retaining member for a large sleeping surface, such as a double or king-size bed, must be significantly longer than a retaining member for a smaller sleeping surface, such as a cot or single bed. The realization that only one retaining member is needed for large sleeping surfaces allows a reduction the cost by requiring only one long retaining member. This can also make the system more compact; reducing space needed in packaging and making it less cumbersome for a user to transport.

[0102] An aspect of the invention provides a kit including the sleeping pod having two connection portions and a pair of linked retaining sections, as described in relation to FIG. 13. The kit may also include an additional retaining section. In this case, the linked retaining sections may each be sized to fit a small sleeping surface (e.g. a cot or single bed), by encircling the cot or single bed when connected to respective connection points of the connection section. Similarly the additional retaining section may be sized to fit a double bed or king-size bed. In some embodiments the additional retaining section may be arranged such that it does not fit a single bed or cot, e.g. by limiting the degree to which adjustment is possible. This can be achieved, for example, by providing a stop immovably fixed to a portion of a strap of the retaining section, such that an adjuster that adjusts the length of the strap by moving along the strap may not pass the stop. This prevents the additional retaining section being used with a cot or single bed, and improves the likelihood of the linked retaining sections being used when the sleeping surface is a cot or single bed. Thus, on small sleeping surfaces the likelihood of only a single retaining section being used is reduced.

[0103] Where a sleep pod having first and second connection portions, respectively cephalic and caudal of the armpit, is used with a single, long retaining section on a large sleeping surface, the retaining section is preferably connected to the first connection portion. If the retaining section is connected to the second connection portion there is a possibility of the infant twisting relative to the sleep pod about the infant’s vertical axis. In order to avoid accidental misuse of the sleep pod, the first and second connection portion may be of different types, such that the second connection portion is of a type that is incompatible with the long retaining section, while the first connection portion is compatible with the long retaining section. In this case, a strap sized for use with single beds and cots may be provided including a first retaining section compatible with the first connection portion and second retaining section compatible with the second connection portion.

[0104] The first and second connection portions having different types may include connection portions of different sizes that are otherwise similar. For example, this may be achieved by providing side release clips of different sizes and/or differently shaped engaging portions on the first and second connection portions 160. In another example the first connection portion 160 may include side release clips and the second connection portion may include buckles. Other combinations of different connection portions are also possible. In some arrangements, the first connection section, cephalic to the armpit, may be larger than the second connection section, as the first connection section may be used on its own, and so may be expected to be placed under greater strain than the second connection section.

[0105] In the embodiment shown in FIG. 12, the first connection portion includes a piece of webbing running left/right across the pouch and connected to the outside of the rear portion of the pouch. At each end of the webbing a female side release clip is provided. As the webbing of the retaining section is continuous between the side release clips, tension applied to the webbing does not result in a tightening or significant deformation of the pouch. The webbing may be attached to the pouch across the horizontal extent of the pouch, or may be attached only at some points. The webbing is substantially level with the shoulder joint when the pouch is in use, and the pouch may be connected to the webbing at a point substantially directly behind the shoulders. A second connection portion is provided substantially level with the infant’s hips and has a similar structure to the first connection portion.

[0106] The embodiment of FIG. 12 includes fabric portions 1220 covering the webbing in the vicinity of the pouch 100. This may improve the appearance of the sleeping pod and help to avoid the infant’s arms coming into contact with the webbing, which may have a rough surface. The webbing may extend beyond the fabric portions 1220.
The mattress may be a cot mattress, a travel mattress, inflatable mattress, or standard mattress, and may be any standard or non-standard size (e.g. single, double, queen size, king size, etc.).

In a further aspect, a bed may be provided having the retaining portion attached to the frame, in a similar manner to the embodiments described above having a retaining portion attached to a mattress.

The number of retaining members, connection points, etc. are not particularly limited, provided that, in use, the orientation of the pouch portion may be substantially fixed relative to the sleeping surface by the retaining section, such that the front of the pouch portion may not face the sleep surface.

In some embodiments, various fasteners and connectors are described as side release clips, press studs, etc. However, the means of fastening or connecting is not particularly limited, and would be understood by the skilled person. A non-exhaustive list of fasteners and connectors that could be used in embodiments include: clips, buckles (e.g. similar to a shoe buckle, airline seatbelt buckle or car seatbelt buckle or clip), clip/press stud/button fasteners, carabiner-type devices, double D or O rings, hook and loop fasteners. Laces or tie-straps could also be used.

In embodiments having one or more straps, it would be understood by the skilled person that the strap may be embodied by any suitable strapping or webbing, and may be elastic or inelastic.

Some examples of an infant sleep pod for maintaining an infant’s orientation relative to a sleeping surface may comprise: a pouch portion for receiving an infant, the pouch portion having a front and a back; a connection portion arranged to connect to a retaining section such that in use: the back of the pouch faces a sleeping surface, the connection portion is connected to the retaining section, the retaining section is secured relative to the sleeping surface; the orientation of the pouch portion is substantially fixed relative to the sleeping surface by the retaining section, such that the front of the pouch portion may not face the sleep surface, and the connection portion is connected to the pouch portion cephalic to the arm pit of the infant.

The connection portion may be connected to the pouch portion behind the shoulders of the infant.

The connection portion may include connection members for attachment to the retaining section, the connection members may be located to the left and right of the infant, respectively.

Some examples of an infant sleep pod may further comprise a further connection portion connected to the pouch portion, the further connection portion for connection to a further retaining section.

The further connection portion may be substantially level with a waist of the infant.

Some examples of an infant sleep pod of may be such that the connection portion includes a pair of connection members for connection to the retaining section, the further connection portion includes a pair of further connectors for connection to the further retaining section, and the pair of connectors is of a different type from the pair of further connectors.

Some examples of a strap for use with the infant sleep pod may comprise: the retaining section, including a first strapping section; the further retaining section, including a second strapping section, and a linking section linking the retaining section with the further retaining section.

Some examples of a kit may comprise an infant sleeping pod and a retaining section.

Some examples of a kit may be such that the kit comprises a strap.

Some examples of a kit may further comprise an additional strap, where the additional strap further comprises an alternative retaining section, wherein the alternative retaining strap is longer than the strap.

Herein, elements that are described as connected may be directly connected or connected via intermediary elements, unless the context requires otherwise.

Throughout the description and claims of this specification, the words “comprise” and “contain” and variations of them mean “including but not limited to”, and they are not intended to (and do not) exclude other moieties, additives, components, integers or steps. Throughout the description and claims of this specification, the singular encompasses the plural unless the context otherwise requires.

Wherein the indefinite article is used, the specification is to be understood as contemplating plurality as well as singularity, unless the context requires otherwise.

Features, integers, characteristics or groups described in conjunction with a particular aspect, embodiment or example of the invention are to be understood to be applicable to any other aspect, embodiment or example herein unless incompatible therewith. All of the features disclosed in this specification (including any accompanying claims, abstract and drawings), and/or all of the steps of any method or process so disclosed, may be combined in any combination, except combinations where at least some of such features and/or steps are mutually exclusive. The invention is not restricted to the details of any foregoing embodiments. The invention extends to any novel one, or any novel combination, of the features disclosed in this specification (including any accompanying claims, abstract and drawings), or to any novel one, or any novel combination, of the steps of any method or process so disclosed.

The reader’s attention is directed to all papers and documents which are filed concurrently with or previous to this specification in connection with this application and which are open to public inspection with this specification, and the contents of all such papers and documents are incorporated herein by reference.

1. An infant sleep pod for maintaining an infant’s orientation relative to a sleeping surface, the sleep pod comprising: a pouch portion for receiving an infant, the pouch portion having a front and a back and left and right sides, and further having sleeves or arm holes on said left and right sides; a pair of connection points, the connection points being on the pouch portion on said left and right sides of the pouch portion each at a location cephalic to an arm pit location defined by the sleeves or arm holes of the pouch portion; and a retaining section including a strap and being detachably connectible to said connection points wherein, in use, when the pair of connection points are detachably connected to the retaining section with the strap running along a left/right direction and the retaining section is secured with respect to the sleeping surface...
by passing around or encircling the sleeping surface the orientation of the pouch portion is substantially fixed relative to the sleeping surface, such that the front of the pouch portion may not face the sleeping surface, whereby the location of the connection points on the pouch portion and the left/right direction of the running of the strap are such that an infant in the pouch portion is inhibited from turning within the pouch portion.

2. The infant sleep pod of claim 1 having connection points cephalic to the armpit location only.

3. The infant sleep pod of claim 1 having exactly one pair of connection points.

4. The infant sleep pod of claim 1, further comprising a further pair of connection points connected to the pouch portion, the further connection points for connection to a further retaining section.

5. The infant sleep pod of claim 4, wherein in use the further connection points are substantially level with a waist portion of the sleeping pod.

6. The infant sleep pod of claim 4, wherein: the connection points include respective connection members for connection to the retaining section, the further connection points include respective further connection members for connection to the further retaining section, and the pair of connection members is of a different type from the pair of further connection members.

7. The infant sleep pod of claim 4, wherein: the further retaining section includes a further strap, and the strap and further strap are linked by a linking section.

8. The infant sleep pod of claim 7, further comprising an additional strap, the additional strap further comprising an alternative retaining section, wherein the alternative retaining strap is longer than the strap.

9. A method for maintaining an infant’s orientation relative to a sleeping surface, the method comprising: placing the infant in a pouch portion of a sleeping pod, the pouch portion having: a front and a back and left and right sides, and further having sleeves or arm holes on said left and right sides, a pair of connection points, the connection points being on the pouch portion on said left and right sides of the pouch portion each at a location cephalic to an armpit location defined by the sleeves or arm holes of the pouch portion, and a retaining section including a strap and being detachably connectible to said connection points, connecting the pair of connection points to the retaining section with the strap running along a left/right direction, the retaining section being secured with respect to the sleeping surface by passing around or encircling the sleeping surface, such that the orientation of the pouch portion is substantially fixed relative to the sleeping surface, such that the front of the pouch portion may not face the sleeping surface, whereby the location of the connection points on the pouch portion and the left/right direction of the running of the strap are such that an infant in the pouch portion is inhibited from turning within the pouch portion.

10. (canceled)