

ACUPRESSURE PILLOW AND METHOD OF APPLYING ACUPRESSURE

FIELD OF INVENTION

5 The present invention relates broadly to an acupressure pillow and to a method of applying acupressure.

BACKGROUND

10 In recent years, there has been increasing interest in providing pillows seeking to address various concerns in relation to supporting a person's head and cervical vertebrae during rest or sleep on a horizontal surface such as in a bed.

Compared to the more traditional particle-filled pillows, such as feather-, down- or synthetic particle-filled pillows, pillows with bodies made from shape maintaining materials such as latex or polyurethane (e.g. memory foam) have become more popular to improve support and other orthopedic functionalities of a pillow.

15 US published patent application US2013/0047339 describes an orthopedic pillow which promotes circulation of the cerebrospinal fluid through blood vessels and nervous tissue of the body including the encephalon and the spinal cord.

SUMMARY

20 In accordance with a first aspect of the present invention there is provided an acupressure pillow comprising a support surface for supporting the cervical vertebrae of a person, the support surface extending along a substantially straight center line inwardly from a front end of the pillow; a toothed support structure substantially traversing the support surface, the toothed support structure comprising a first acupressure tooth disposed substantially on the
25 straight center line and configured for exerting acupressure centrally below the occipital base of a person, and second and third acupressure teeth disposed substantially symmetrically with respect to the center line; and two acupressure protrusions disposed symmetrically with respect to the straight center line between the front end of the pillow and the toothed support structure.

30 In accordance with a second aspect of the present invention, there is provided a method of applying acupressure using the acupressure pillow of the first aspect.

BRIEF DESCRIPTION OF THE DRAWINGS

Embodiments of the invention will be better understood and readily apparent to one of ordinary skill in the art from the following written description, by way of example only, and in conjunction with the drawings, in which:

- 5 Figures 1a) shows a schematic top view of an acupressure pillow according to an example embodiment.

Figures 1b) shows a schematic front view of the acupressure pillow of figure 1a).

- 10 Figure 2 shows a schematic drawing illustrating a projection of the acupressure structure of the acupressure pillow of Figure 1a) onto an outline of a person while in a supine position on the pillow.

Figure 3 shows a schematic drawing illustrating a bottom view of the pillow of Figure 1a).

Figure 4 shows an example magnetic structure in the form of a stack of magnetic devices for use in example embodiments.

- 15 Figure 5a) shows a back view illustrating the pillow of Figure 1a) with a cover in the form of a pillow case.

Figure 5b) shows a bottom view illustrating the pillow of Figure 1a) with the cover in the form of a pillow case.

Figure 6a) shows a photograph of a top view a mold for fabrication of a pillow in accordance with an embodiment.

- 20 Figure 6b) shows a photographs of a perspective side view of the mold of figure 6a).

DETAILED DESCRIPTION

- Embodiments of the present invention relate to an acupressure pillow comprising a cervical vertebrae depression for supporting the cervical vertebrae of a person, the cervical vertebrae depression extending along a substantially straight center line inwardly from a front end of the pillow, a toothed support structure substantially traversing the cervical vertebrae depression, the toothed support structure comprising a first acupressure tooth disposed substantially on the straight center line for exerting acupressure centrally below the occipital base of a person and second and third acupressure teeth disposed substantially symmetrically with respect to the center line, and first and second acupressure protrusions disposed symmetrically with respect to the straight center line between the front end of the pillow and the toothed support structure.
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It has been found by the inventor that providing structures on the pillow which are specifically shaped and configured to exert acupressure to selected points below a person's

occipital base in the area of the cervical vertebrae can advantageously provide an improved ergonomic pillow, by passively working selected acupressure points using gravitational reactive forces exerted by the toothed support structure and the acupressure protrusions, while the person lies in a supine position, such as during rest or sleep.

5 Figures 1a) and b) show a schematic top view and a schematic front view respectively of an acupressure pillow 100 according to an example embodiment. The acupressure pillow 100 comprises a cervical vertebrae depression, here in the form of a substantially hourglass shaped channel 102, for supporting the cervical vertebrae (not shown) of a person. The channel 102 extends along a substantially straight center line 104 inwardly from a front end 106 of the
10 pillow 100. The channel 102 is upwardly slanted from the front end 106 such that the cervical vertebrae are advantageously supported towards the occipital base.

A toothed support structure, here in the form of a ridge 108, substantially traverses the channel 102 at an upper end thereof. The ridge 108 comprises a central acupressure peak or tooth 110 disposed substantially on the straight center line 104 for exerting acupressure
15 centrally below the occipital base of the person. The ridge 108 further comprises acupressure peaks or teeth 112, 114 disposed substantially symmetrically with respect to the center line 104. The silhouette of the ridge 108 in this embodiment is approximately concave, with top surfaces 116, 118 of the peaks 112, 114 arranged slanted towards the center line 104 and at a higher position than the top surface 120 of the peak 110.

20 In this embodiment, the peaks 110, 112 and 114 are about 10 mm high. The peaks 112, 114 may be about 50 mm wide, whereas the peak 110 may be about 30 mm wide, measured perpendicular to the center line 104. In this embodiment, the highest points of the surfaces 116, 118 may be about 8 mm above the surface 120. However, it will be appreciated that different dimensions and/or shapes and/or patterns can be used in different embodiments, for
25 example for use with persons of different age groups and/ or to meet desired strengths of the acupressure exerted at respective acupressure points.

The channel 102 in this embodiment is defined, in part, by curved opposing edges 122, 124 of support plateaus, here in the form of elevated slanted surface portions 126, 128. A distance between the opposing edges 122, 124 (measured perpendicular to the center line 104)
30 decreases from the front end 106 of the pillow 100 to a minimum distance between respective vertices 130, 132 of the curved edges 122, 124. Beyond the vertices 130, 132 the distance between the opposing edges increases towards the ridge 108, defining the substantially hourglass shape of the channel 102 in this embodiment. Respective edge segments 134, 136 of the surface portions 126, 128 including the vertices 130, 132 preferably function as
35 additional peaks or teeth for exerting acupressure. The height of the edge segments 134, 136 above the channel 102 is about 10 mm in this embodiment.

Figure 2 shows a schematic drawing illustrating a projection of the peaks 110, 112, 114, 134, 136 onto an outline 200 of a person while in a supine position on the pillow 100. In this embodiment, the peaks 112, 114 are disposed with their respective centers between about 3 to
40 6 times 2.54 cm (2.54 cm = 1 inch) apart for acupressure points in respective gaps between

the trapezius muscle and the sternocleidomastoid muscles on respective sides of the cervical vertebrae. Preferably, the peaks 112, 114 are disposed with their respective centers between about 4.5 times 2.54 cm apart. It is believed that working these acupressure points located below the base of the skull in the hollow between the large vertical neck muscles are
5 beneficial in relieving arthritis, headaches and neck pain that causes insomnia.

Peak 110 works an acupressure point in the center of the back of the head in the large hollow under the occipital base (or base of the skull). It is believed that working this acupressure point is beneficial in relieving insomnia as well as mental stress.

The edge segments 134, 136 are disposed between about 0.5 to 1.5 times 2.54 cm apart for
10 exerting acupressure on the trapezius muscle on respective sides of the cervical vertebrae. Preferably, the edge segments 134, 136 are disposed about 2.54 cm apart. It is believed that working these acupressure points is beneficial in relieving insomnia, stress, burnout and exhaustion.

In this embodiment, the peaks 110, 112 and 114 are disposed to work substantially at the
15 same lateral position relative to the occipital base, while the edge portions 134, 136 are disposed to work at a greater distance from the occipital base. In one embodiment, the edge portions 134, 136 are disposed with their respective centers about 1 to 3 times 2.54 cm away from the toothed structure 108 (in a direction towards the front end 106 of the pillow 100), preferably about 2 times 2.54 cm away from the toothed structure 108. In different
20 embodiments, the peaks 110, 112 and 114 may be disposed to work at different depths below the occipital base, e.g. they may be disposed along a curved line, instead of a substantially straight line as illustrated in Figure 2. The edge portions 134, 136 may be disposed to work at different respective distances from the toothed structure 108.

The pillow 100 may have an outer width W of about 55 cm, outer depth D of about 30 cm and
25 outer height of about 10 cm in one embodiment. However, it will be appreciated that different dimensions can be used in different embodiments, for example for use with persons of different age groups and/ or to meet desired appearances of the pillow.

Returning now to Figures 1a) and b), the pillow 100 in this embodiment comprises a back
30 head depression in the form of a concave cradle 138 formed centrally on a top surface 140 of the pillow 100. In this embodiment, the top surface 140 is substantially plane parallel to a flat bottom surface 142 which in use faces an external surface on which the pillow 100 is placed, such as the surface of a mattress. It will be appreciated that the cradle 138 may have an approximately circular circumference and a concave profile for approximating a space in which the back of a person's head can be accommodated, without being limited to a particular
35 shape and/or dimensions.

The ridge 108 is disposed between the channel 102 and the cradle 138. One or more, here two, head support structures in the form of textured ridges 144, 146 formed on the concave surface of the cradle 138 symmetrically with respect to the center line 104. The ridges 144, 146 are configured to "grip" the back head, with the gaps e.g. 148, 150 preferably

accommodating shape changes of the peaks e.g. 152, 154, which can improve conformity to, and support of, back heads of different shapes as well as air circulation. In this embodiment, the peaks are slanted such that their height above the bottoms of the gaps e.g. 148, 150 increases towards the center line 104.

5 Also on this embodiment, the pillow 100 comprises elevated edge regions 158, 160 around substantially planar side resting areas 162, 164 of the top surface 140. Preferably, the edge regions 158, 160 facilitate an at least partial cradling of the person's head when the head is turned to either side during rest or sleep, and advantageously assist in preventing that the head moves from the pillow 100 during rest or sleep. The height of the edges may be about 10 mm
10 in this example embodiment.

It will be appreciated that different heights can be used in different embodiments, for example for use with persons of different age groups and/ or to meet desired appearances of the pillow. The dimensions are not limited to the example dimensions and/or any schematically illustrated relative dimensions as described and/or shown herein.

15 Figure 3 shows a schematic drawing illustrating a bottom view of the pillow 100 in this example embodiment. A recess, here in the form of a substantially rectangular depression 300 of about 1 cm depth, is formed substantially underneath the back head cradle 138 (compare Figure 1a)) in the bottom surface 142 of the pillow. It will be appreciated that the depression can be provided in different shapes and/or dimensions and/or patterns. Providing the
20 depression 300 can advantageously result in a trough of the back head cradle 138 being constituted by a suspended portion 302 of pillow material. This can preferably avoid or at least reduce resistive forces on the back head typically caused by compression of the pillow material against a surface the pillow is placed on, by allowing a bending of the pillow material in the trough of the back head cradle 138 instead of, or in addition to, compression of
25 the pillow material.

The pillow 100 further comprises one or more recesses e.g. 304 formed in the side walls of the pillow 100 for receiving respective magnetic structures therein. In this embodiment, one pair of magnet recesses 304, 306 is provided, the pair 304, 306 disposed symmetrically with respect to the straight center line 104 of the pillow 100. It in different embodiments, a
30 different numbers and locations of recesses may be provided, disposed symmetrically, un-symmetrically, or on only one side of the straight line 104. Also, while each recess 304, 306 is configured to receive a magnetic structure, a user can choose to insert only one magnetic structure into either recess 304, 306, or two magnetic structures, one each into recess 304, 306.

35 The recesses 304, 306 may be substantially tube shaped with a diameter of about 60 mm and a depth of about 70 mm, for receiving magnetic structure of about 50 mm diameter and about 60 mm. However, it will be appreciated that different dimensions can be used in different embodiments, for example for pillows used for persons of different age groups and/ or to meet desired magnetic interference strengths.

Figure 4 shows an example magnetic structure in the form of a stack 400 of magnetic devices e.g. 402. Different types of magnetic devices may be used. In one example, each magnetic device 402 comprises a plurality of pieces formed from a single piece of magnetic material, wherein movement of the pieces of the magnetic material with respect to each other is inhibited, the pieces forming a dome-shaped structure 404. An auxiliary magnet formed of a single piece of magnetic material 406 is provided to increase a resulting magnetic interference field generated by the magnetic device 402. Details of how to manufacture magnetic device structures for use in an example embodiment can be found in published international patent application number WO2008/030191. The stack 400 may be held together conveniently through magnetic attraction between the aligned magnetic devices e.g. 402. In this embodiment, a structural element in the form of a sleeve structure 407 is provided, formed of a non-magnetic material such as, but not limited to, plastic, for improved rigidity of the stack of magnetic devices 402.

The sleeve structure 407 comprises different rimmed compartments 411-416, for accommodating the respective elements of the magnetic devices e.g. 402. An additional external tube 417 may be used to enclose the sleeve structure 407 to advantageously provide a smoother surface and easier insertion into the recesses 304, 306. A releasable handle 408 is provided connected to a bottom shaft 418 of the sleeve 407 to facilitate insertion and removal of the stack 406 into the recesses e.g. 304 of the pillow 100 (compare Figure 3). In this embodiment, the handle may be friction fitted to the bottom shaft aided by cooperating inner circumferential lips (hidden in Figure 4). It will be appreciated that other designs may be used in different embodiments.

The sleeve structure 407 and/or the tube 417 may be capable of being opened and closed, for example by way of snap-locked longitudinal halves of the sleeve structures 407 and the tube 417, possibly hinged, or by a screw thread rotation design, allowing access to the magnetic devices e.g. 402. This can facilitate removal, replacement, addition of magnetic devices e.g. 402.

Returning to Figure 3, in this embodiment the pillow 100 further comprises a recess 312 formed in the bottom surface 142 at the front end underneath the cervical vertebrae channel 102 (see Figure 1). The recess may be dimensioned and shaped to accommodate a single magnetic device such as magnetic device 402 described above with reference to Figure 4.

Example embodiments of the present invention can thus advantageously be utilized for subjecting various regions of a person's head and/or neck and/or shoulders to magnetic interference fields, which can provide increased mental concentration and alertness and also for relief from ailments such as chronic aches and pain or injuries or post-surgery recovery or illnesses, and in a manner that is non-intrusive, that is comfortable, and that does not inhibit a person's activities.

Figures 5a) and b) show back and bottom views illustrating the pillow 100 of an example embodiment with a cover in the form of a pillow case 500 fitted to the pillow 100. The pillow case is fitted to accommodate the pillow 100, which can be inserted into the pillow case 500

through a zipper 502 extending across the width of the pillow 100. The pillow case further comprises sealable flaps e.g. 504 and associated zippers e.g. 506, to allow access to the recesses e.g. 304 formed in the side walls of the pillow 100 for receiving a magnetic structure therein. Similarly, a sealable flap 508, with associated zipper 510, is provided at the bottom of the pillow case 500, to allow access to the recess 312.

In this embodiment, pouches e.g. 512, 514 are integrated in the pillow case 500. The pouches e.g. 512 are shaped and dimensioned to be received in the corresponding recesses, e.g. 304. Preferably, the pouches e.g. 512 function as in-lays for the recesses e.g. 304, which can reduce or eliminate damage to the pillow body material by the magnetic structures received therein, including during insertion and removal of the magnetic structures. The pouches, which may be made from the same material as the remainder of the pillow case 500, advantageously also facilitate ease of insertion and removal of the magnetic structures by reducing friction.

In addition to allowing access to the magnetic devices, for example for replacement, selective use, different magnetic interference strengths etc., the flaps e.g. 504, 508, when sealed by way of the associated zippers, preferably conveniently secure the magnetic devices within the recesses e.g. 304, 312. Additionally or alternative, the recesses e.g. 304, 312 and magnetic devices e.g. 402 can be shaped and dimensioned for friction fitting. In different embodiments, other means for sealing the flaps may be provided, including, but not limited to, Velcro and buttons.

In the example embodiments described above, the pillow body may be made of any suitable shape maintaining material, such as latex or polyurethane (e.g. memory foam). The material can be processed using techniques understood in the art, such as molding and/or cutting techniques to create the specific structural features. The pillow body may be fitted in any suitable cover, e.g. into pillow cases made from natural and/or synthetic fibers. The pillow cases may be custom fitted and/or the pillow body may have overall dimensions matched to existing pillow case standard sizes. The pillow may be made from a single material or different materials. For example, the acupressure structures may be made from material with higher compressive strength than the body of the pillow, for example to meet desired strengths of the acupressure exerted at respective acupressure points.

Figures 6a) and b) show photographs of a top view and a perspective side view of a mold 600 for fabrication of a pillow in accordance with an embodiment. Mold portions 601-603 for forming acupressure teeth of a toothed support structure and mold portions 604, 605 for forming two acupressure protrusions have been labelled. Mold portions e.g. 606 for forming gaps in the head support structures have also been labelled.

In one embodiment, an acupressure pillow comprises a support surface for supporting the cervical vertebrae of a person, the support surface extending along a substantially straight center line inwardly from a front end of the pillow; a toothed support structure substantially traversing the support surface, the toothed support structure comprising a first acupressure tooth disposed substantially on the straight center line and configured for exerting acupressure

centrally below the occipital base of a person, and second and third acupressure teeth disposed substantially symmetrically with respect to the center line; and two acupressure protrusions disposed symmetrically with respect to the straight center line between the front end of the pillow and the toothed support structure.

- 5 The support surface may be disposed in a depression formed on a top surface of the pillow.

In one embodiment, the second and third teeth are configured for exerting acupressure in a gap between the trapezius muscle and the sternocleidomastoid muscle on both sides of the cervical vertebrae.

- 10 In one embodiment, the second and third teeth are disposed between about 3 to 6 times 2.54 cm apart. The second and third teeth may be disposed between about 4.5 times 2.54 cm apart.

In one embodiment, the two acupressure protrusions are configured for exerting acupressure on the trapezius muscle on respective sides of the cervical vertebrae. The two acupressure protrusions may be disposed between about 0.5 to 1.5 times 2.54 cm apart. The acupressure portions of the edges may be disposed between about 2.54 cm apart.

- 15 In one embodiment, the two acupressure protrusions are disposed with their respective centers about 1 to 3 times 2.54 cm away from the toothed support structure. The two acupressure protrusions may be disposed with their respective centers about 2 times 2.54 cm away from the toothed support structure.

- 20 In one embodiment, the two acupressure protrusions form part of opposing edges of support plateaus defining the support surface therebetween. A distance between the opposing edges of the plateaus may decrease from a front end of the pillow to a minimum distance between the respective acupressure protrusions, the distance between the opposing edges increasing beyond the acupressure protrusions. The opposing edges may be curved and the acupressure protrusions comprise respective vertices of the curved opposing edges.

- 25 In one embodiment, the pillow further comprises a back head depression, wherein the toothed support structure is disposed between the cervical vertebrae depression and the back head depression. The pillow may further comprise a recess formed substantially underneath the back head depression in a bottom surface of the pillow, such that a trough of the back head depression comprises a suspended portion of the pillow. The pillow may further comprise one
30 or more head support structures comprising peaks separated by gaps therebetween formed on a surface of the back head depression.

- In one embodiment, the pillow further comprises one or more magnet recesses for receiving respective magnetic structures therein. The pillow may further comprise two magnet recesses disposed symmetrically with respect to the straight center line formed in a back wall of the
35 pillow. The pillow may further comprise a cover, the cover comprising one or more sealable flaps for allowing access to the one or more magnet recesses. The cover may comprise one or more pouches configured for being received in the one or more magnet recesses.

In one embodiment, a method of applying acupressure comprises using an acupressure pillow as described herein.

- 5 It will be appreciated by a person skilled in the art that numerous variations and/or modifications may be made to the present invention as shown in the specific embodiments without departing from the spirit or scope of the invention as broadly described. The present
embodiments are, therefore, to be considered in all respects to be illustrative and not restrictive. Also, the invention includes any combination of features, in particular any combination of features in the patent claims, even if the feature or combination of features is not explicitly specified in the patent claims or the present embodiments.
- 10 For example, the shapes and/or dimensions and/or patterns are not limited to the example described and/or shown herein and/or any schematically illustrated relative shapes and/or relative dimensions and/or relative patterns as described and/or shown herein.

CLAIMS

1. An acupressure pillow comprising:

a support surface for supporting the cervical vertebrae of a person, the support surface extending along a substantially straight center line inwardly from a front end of the pillow;

5 a toothed support structure substantially traversing the support surface, the toothed support structure comprising a first acupressure tooth disposed substantially on the straight center line and configured for exerting acupressure centrally below the occipital base of a person, and second and third acupressure teeth disposed substantially symmetrically with respect to the center line; and

10 two acupressure protrusions disposed symmetrically with respect to the straight center line between the front end of the pillow and the toothed support structure.

2. The pillow of claim 1, wherein the support surface is disposed in a depression formed on a top surface of the pillow.

3. The pillow of claims 1 or 2, wherein the second and third teeth are configured for
15 exerting acupressure in a gap between the trapezius muscle and the sternocleidomastoid muscle on both sides of the cervical vertebrae.

4. The pillow of claim any one of the preceding claims, wherein the second and third teeth are disposed between about 3 to 6 times 2.54 cm apart.

5. The pillow of claim 4, wherein the second and third teeth are disposed between about
20 4.5 times 2.54 cm apart.

6. The pillow of any one of the preceding claims, wherein the two acupressure protrusions are configured for exerting acupressure on the trapezius muscle on respective sides of the cervical vertebrae.

7. The pillow of claim 6, wherein the two acupressure protrusions are disposed between
25 about 0.5 to 1.5 times 2.54 cm apart.

8. The pillow of claim 7, wherein the acupressure portions of the edges are disposed about 2.54 cm apart.

9. The pillow of any one of the preceding claims, wherein the two acupressure protrusions are disposed with their respective centers about 1 to 3 times 2.54 cm away from
30 the toothed support structure.

10. The pillow of claim 9, wherein the two acupressure protrusions are disposed with their respective centers about 2 times 2.54 cm away from the toothed support structure.

11. The pillow of any one of the preceding claims, wherein the two acupressure protrusions form part of opposing edges of support plateaus defining the support surface therebetween.
- 5 12. The pillow of claim 11, wherein a distance between the opposing edges of the plateaus decreases from a front end of the pillow to a minimum distance between the respective acupressure protrusions, the distance between the opposing edges increasing beyond the acupressure protrusions.
13. The pillow of claim 12, wherein the opposing edges are curved and the acupressure protrusions comprise respective vertices of the curved opposing edges.
- 10 14. The pillow of any one of the preceding claims, further comprising a back head depression, wherein the toothed support structure is disposed between the cervical vertebrae depression and the back head depression.
- 15 15. The pillow of claim 14, further comprising a recess formed substantially underneath the back head depression in a bottom surface of the pillow, such that a trough of the back head depression comprises a suspended portion of the pillow.
16. The pillow of claims 14 or 15, further comprising one or more head support structures comprising peaks separated by gaps therebetween formed on a surface of the back head depression.
- 20 17. The pillow of any one of the preceding claims, further comprising one or more magnet recesses for receiving respective magnetic structures therein.
18. The pillow of claim 17, comprising two magnet recesses disposed symmetrically with respect to the straight center line formed in a back wall of the pillow.
19. The pillow of claims 17 or 18, further comprising a cover, the cover comprising one or more sealable flaps for allowing access to the one or more magnet recesses.
- 25 20. The pillow of claim 19, wherein the cover comprises one or more pouches configured for being received in the one or more magnet recesses.
21. The pillow of any one of the preceding claims, wherein the acupressure teeth and the acupressure protrusions have a height of about 10 mm
- 30 22. A method of applying acupressure using the acupressure pillow of any one of the preceding claims.