Title: METHOD AND DEVICE FOR TREATING ATHLETES’S FOOT

Abstract: A method for preventing and treating athlete’s foot, by a toe (2) being kept spaced from an adjacent toe (1, 3) by a moisture-absorbent, preferably porous material, disposed between the toes (1, 2, 3), possibly by the material being impregnated with a fungicidal agent, an ointment or other substance. A device for preventing and treating athlete’s foot by the moisture-absorbent material being formed as a sleeve (6), which is arranged to be passed onto a toe (2).
METHOD AND DEVICE FOR TREATING ATHLETE'S FOOT

This invention relates to a method and a device for treating athlete's foot, more specifically as a moisture-absorbing soft sleeve to be passed onto a toe.

Tinea pedis thrives in moist surroundings and creates fissures and wounds in the interdigital skin, especially when the toes lie close together.

Athlete's foot can be cured through medication, but this often involves strong antibiotics, which may in turn cause allergic reactions with wounds occurring in other areas of the foot and calf. Due to the risk of fungi and bacteria developing immunity to antibiotics, it is also desirable that treatment with antibiotics should be replaced by other forms of treatment.

The invention has as its object to remedy the drawbacks of the prior art.
The object is realized according to the invention through the features specified in the description below and in the following claims.

Athlete's foot can be prevented from establishing and established athlete's foot can disappear by dry conditions being created between the toes. This is achieved effectively by creating space between the toes, so that an attacked area will be aired and dried up. The use of a moisture-absorbent material may increase the drying effect.

A toe sleeve made of a soft, absorbent material (for example knitted, woven or compressed wool or cotton) is placed round the major part of the length of a toe. Thereby it is kept spaced from the adjacent toe, while at the same time the surface of the toe and the transition to the foot blade is massaged by the toe sleeve moving. Athlete's foot is prevented from establishing by creating a dry climate, or by the toe sleeve massaging the area.

By placing a toe sleeve on toes number two and number four counted from the outer toe, there will be spacing between all toes. Thereby the entire foot is treated against attacks between the toes. In attacks under the toes it is advantageous to place a sleeve on every toe attacked.

The toe sleeve may be used underneath normal socks and together with ordinary footwear.

The toe sleeve can be washed and dried like a piece of clothing made of the same type of material.
If it is desirable to combine the sleeve treatment with medication, medicine in the form of an ointment can be put onto/into the toe sleeve.

Tests of the toe sleeve have been carried out over a two-year period on persons who were severely afflicted by athlete's foot before the test period. In the test period athlete's foot did not occur.

A non-limiting example of a preferred embodiment is described below and visualized in the accompanying drawings, in which:

Fig. 1 shows the toe portion of a foot with a toe sleeve placed on toe number two;

Fig. 2 shows a cross-section through a toe sleeve;

Fig. 3 shows a longitudinal section II-II.

In the drawings the reference numerals 1 to 5 indicate the toes of a foot. A toe sleeve 6 has been placed on toe 2. The toe sleeve 6 exhibits an inner diameter d, a wall thickness T and a length L.

The dimensions d, T, L of the toe sleeve 6 are adapted to the size of the toes and the elasticity of the toe sleeve material.

In the treatment of athlete's foot a toe sleeve 6 is passed onto a toe 2, at which there is an area infected by tinea pedis. When a toe sleeve 6 is used on each of the toes 2 and 4, the whole infectable area of the foot is covered.
When additional treatment with curing ointment is required, the ointment is applied to the outer surface of the toe sleeve 6 and/or to the entire, or parts of, the inside of the toe sleeve 6.

The toe sleeve 6 is used with advantage in dry condition. When the moisture content increases, the effect of the treatment decreases. After a suitable period of use, the sleeve is replaced by a dry sleeve 6.

Used toe sleeves 6 are washed as prescribed for the type of material used, they are dried and reused.
CLAIMS

1. A method for preventing and treating athlete's foot, characterized in that a toe (2) is kept spaced from an adjacent toe (1, 3) by a moisture-absorbent, preferably porous material placed between the toes (1, 2, 3), possibly that the material is impregnated with a fungicidal agent, an ointment or other substance.

2. A device for carrying out the method of Claim 1, characterized in that the moisture-absorbent material is formed as a sleeve (6), which is arranged to be passed onto a toe (2).
# International Search Report

## Classification of Subject Matter

**IPC7:** A61F 13/06, A61L 15/44, A61F 5/01, A61L 15/07  
According to International Patent Classification (IPC) or to both national classification and IPC

## Fields Searched

Minimum documentation searched (classification system followed by classification symbols)

**IPC7:** A61F, A61L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE, DK, FI, NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

**WPI, PAJ, FULLTEXT, INSPEC, EPOQUE**

## Documents Considered to be Relevant

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>US 3943922 A (DAIHACHIRO UMEUDA), 16 March 1976 (16.03.76), figures 1-2, claims 1-4</td>
<td>1-2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>US 5497789 A (GERALD P. ZOOK), 12 March 1996 (12.03.96), column 1, line 53 - line 57; column 2, line 66 - column 3, line 43, figure 1, claim 1</td>
<td>1-2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>DE 10020989 A1 (BERGMANN, KONRAD, DR.), 23 November 2000 (23.11.00), figure 2, claims 1-8</td>
<td>1-2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>DE 20107532 U1 (MULLER, DIETER), 20 Sept 2001 (20.09.01), page 2, line 8 - page 3, line 25, figure 3, claims 5-6</td>
<td>1-2</td>
</tr>
</tbody>
</table>

- [X] Further documents are listed in the continuation of Box C.  
- [X] See patent family annex.

* Special categories of cited documents:
  - "A" document defining the general state of the art which is not considered to be of particular relevance
  - "E" earlier application or patent but published on or after the international filing date
  - "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
  - "O" document referring to an oral disclosure, use, exhibition or other means
  - "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "&" document member of the same patent family

### Date of the Actual Completion of the International Search

12 November 2003

### Date of Mailing of the International Search Report

17 -11- 2003

Name and mailing address of the ISA/Swedish Patent Office

Box 5055, S-102 42 STOCKHOLM

Facsimile No. +46 8 666 02 86

Authorized officer

Beata Slusarczyk/Els

Telephone No. +46 8 782 25 00

Form PCT/ISA/210 (second sheet) (July 1998)
<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>DE 3504544 A1 (BÖCKMANN, OTTO), 14 August 1986 (14.08.86), abstract</td>
<td>1-2</td>
</tr>
<tr>
<td>A</td>
<td>US 4961732 A (CHRISTOPHER J. STIENSTRA), 9 October 1990 (09.10.90), figure 1, Summary of the invention</td>
<td>1-2</td>
</tr>
</tbody>
</table>
# INTERNATIONAL SEARCH REPORT

## Information on patent family members

<table>
<thead>
<tr>
<th>Patent document cited in search report</th>
<th>Publication date</th>
<th>Patent family member(s)</th>
<th>Publication date</th>
</tr>
</thead>
<tbody>
<tr>
<td>US 3943922 A</td>
<td>16/03/76</td>
<td>JP 51038978 A</td>
<td>31/03/76</td>
</tr>
<tr>
<td>US 5497789 A</td>
<td>12/03/96</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>DE 10020989 A1</td>
<td>23/11/00</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>DE 20107532 U1</td>
<td>20/09/01</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>DE 3504544 A1</td>
<td>14/08/86</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>US 4961732 A</td>
<td>09/10/90</td>
<td>NONE</td>
<td></td>
</tr>
</tbody>
</table>

Form PCT/ISA/210 (patent family annex) (July 1998)