# TABLE OF CONTENTS

## ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>9</td>
</tr>
</tbody>
</table>

## GLOSSARY OF TERMS

<table>
<thead>
<tr>
<th>Term</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10</td>
</tr>
</tbody>
</table>

## CHAPTER 1

General introduction

1.1 *Human body temperature* | 15 |
1.2 *Core temperature determination* | 21 |
1.3 *Heat stress and exercise* | 31 |

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>13</td>
</tr>
</tbody>
</table>

## CHAPTER 2

Non-invasive continuous core temperature measurement by zero heat flux

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>57</td>
</tr>
</tbody>
</table>

## CHAPTER 3

Infrared thermal imaging of the inner canthus of the eye as an estimator of body core temperature

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>75</td>
</tr>
</tbody>
</table>

## CHAPTER 4

Limitations of temperature measurement in the aural canal with an ear mould integrated sensor

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>87</td>
</tr>
</tbody>
</table>

## CHAPTER 5

Telemetry pill versus rectal and esophageal temperature during extreme rates of exercise-induced core temperature change

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>109</td>
</tr>
</tbody>
</table>

## CHAPTER 6

Effect of warm-up and precooling on pacing during a 15-km cycling time trial in the heat

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>125</td>
</tr>
</tbody>
</table>

## CHAPTER 7

Effects of wind application on thermal perception and self-paced performance

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>143</td>
</tr>
</tbody>
</table>

## CHAPTER 8

Heat strain and performance in ice hockey goalies

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>169</td>
</tr>
</tbody>
</table>
CHAPTER 9

Summarizing discussion

APPENDIX

A.1 Electrical resistance 201
A.2 Infrared 209
A.3 Radio waves 212
A.4 Heat flow 214

SAMENVATTING (DUTCH SUMMARY) 223

DANKWOORD (WORD OF THANKS) 227

LIST OF PUBLICATIONS 231

CURRICULUM VITAE 232