22
Acute Trauma Index (PATH Index) (ATI)

Background

The Acute Trauma Index is based on patient admission values of systolic blood pressure ($P$), arterial pH ($A$), prothrombin time ($T$), and blood hematocrit ($H$). All these change soon after trauma and provide a means of patient characterization at the time of hospital admission. A large Acute Trauma Index corresponds to an increased likelihood of patient death.

Method

Let $P$ (mmHg) be the systolic blood pressure, $A$ be the arterial blood pH, $T$ be the prothrombin time (seconds), and $H$ (%) be the percent hematocrit. Then the

```
ACUTE TRAUMA INDEX (PATH INDEX)
(C) D. JOHN DOYLE MD PhD

INPUT DATA
SYSTOLIC BP (MMHG) = 90
PROTHROMBIN TIME (SECONDS) = 26
PERCENT HEMATOCRIT = 32
ARTERIAL BLOOD pH = 7.21

DERIVED DATA
ACUTE TRAUMA INDEX = 7.8
```

Figure 22.1.

D. J. Doyle, Computer Programs in Clinical and Laboratory Medicine
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**ATI**

*ACUTE TRAUMA INDEX*

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**KEY OFF**

**WIDTH 40**

```plaintext
SP$=SPACE$(40)
```

**DISPLAY TITLE**

```plaintext
GOSUB 1540
```

**INPUT DATA**

```plaintext
I= ((P-127)/21!)^2
I=I+((A-7.46)/.065)^2
I=I+((T-13!)/2!)^2
I=I+((H-36.9)/5.96)^2
I=SQR(I)
```

**ROUNDOFF TO TWO DECIMAL POINTS**

```plaintext
I=INT(I*100+.5)/100
```

**DISPLAY TITLE AND DATA**

```plaintext
GOSUB 1540
PRINT"INPUT DATA"
```

**SYSTOLIC BP (MMHG)=";P**

**PROTHROMBIN TIME (SECONDS)=";T**

**PERCENT HEMATOCRIT=";H**

**ARTERIAL BLOOD pH=";A**

**ACUTE TRAUMA INDEX=";I**

**TITLE DISPLAY SUBROUTINE**

```plaintext
CLS
```

**FIGURE 22.2.**