

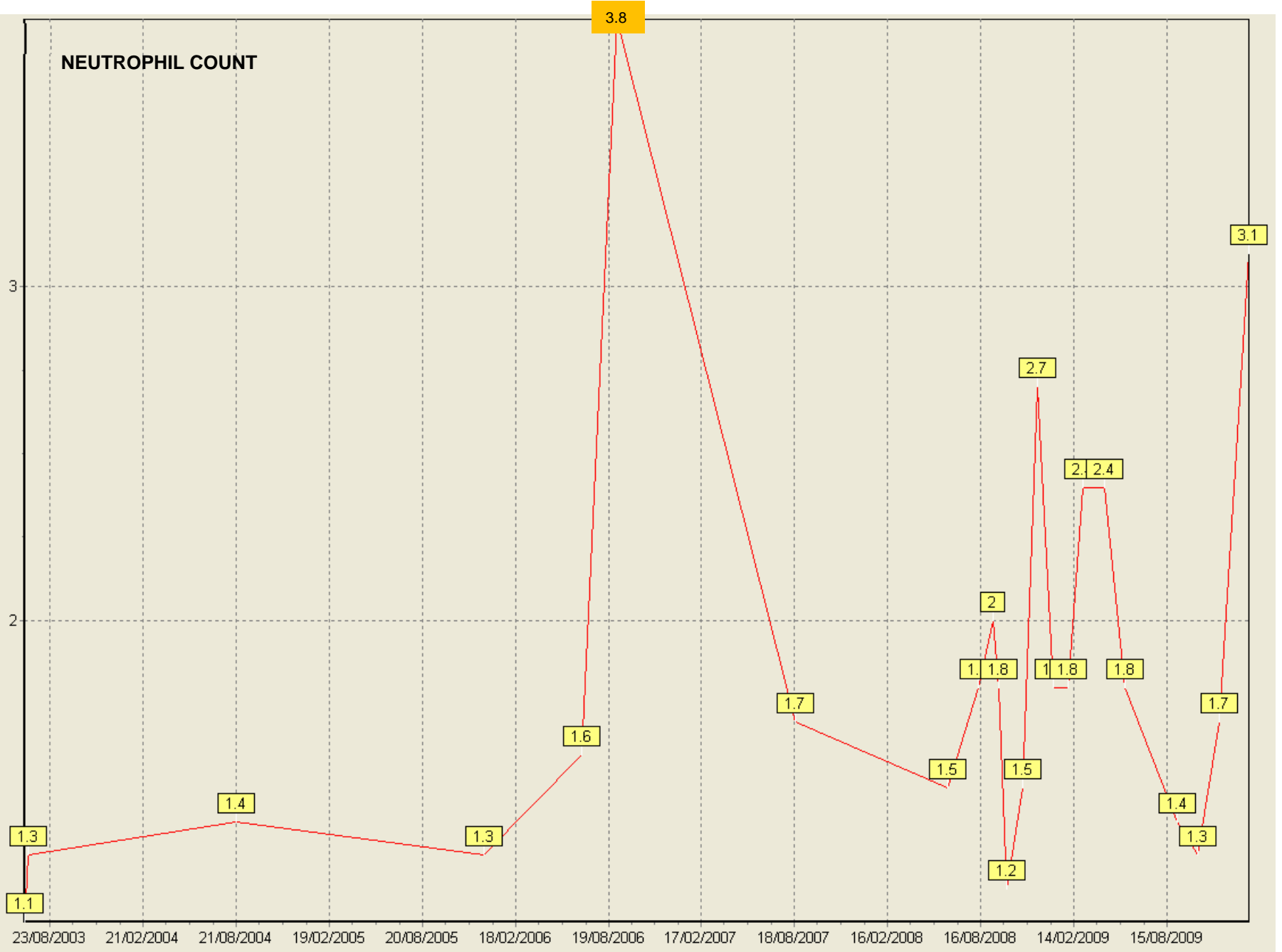
NEUTROPENIA

Is it all in the time of day.

Lady Golfer

- ▶ Persistent Neutropenia
- ▶ Always sampled with fasting glucose and lipids
- ▶ Fit and well
- ▶ GP unconcerned
- ▶ Patient worried

NEUTROPHIL COUNT

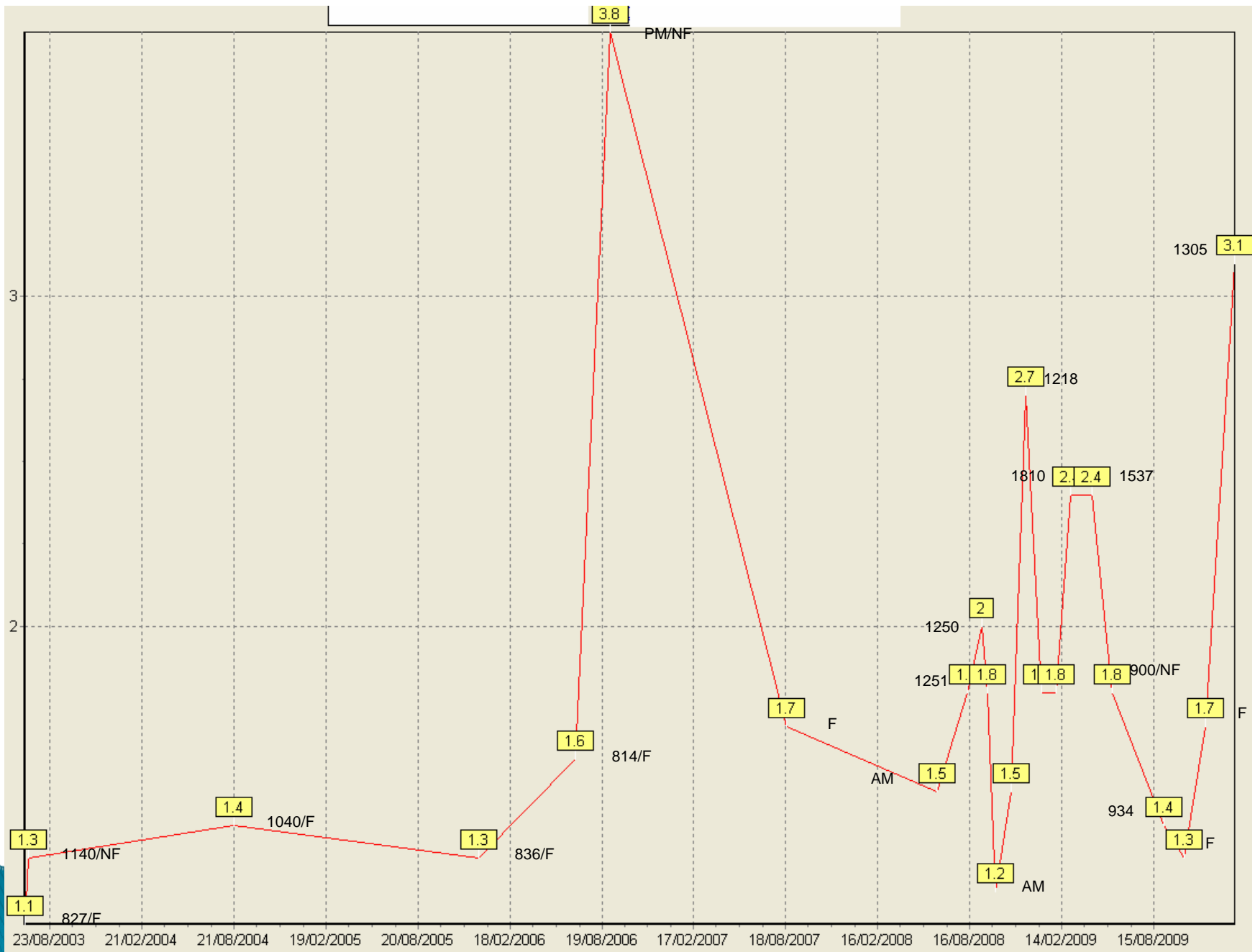


Medication

- Lipex
- Quinapril
- Glucosamine
- Panadol
- Cartia

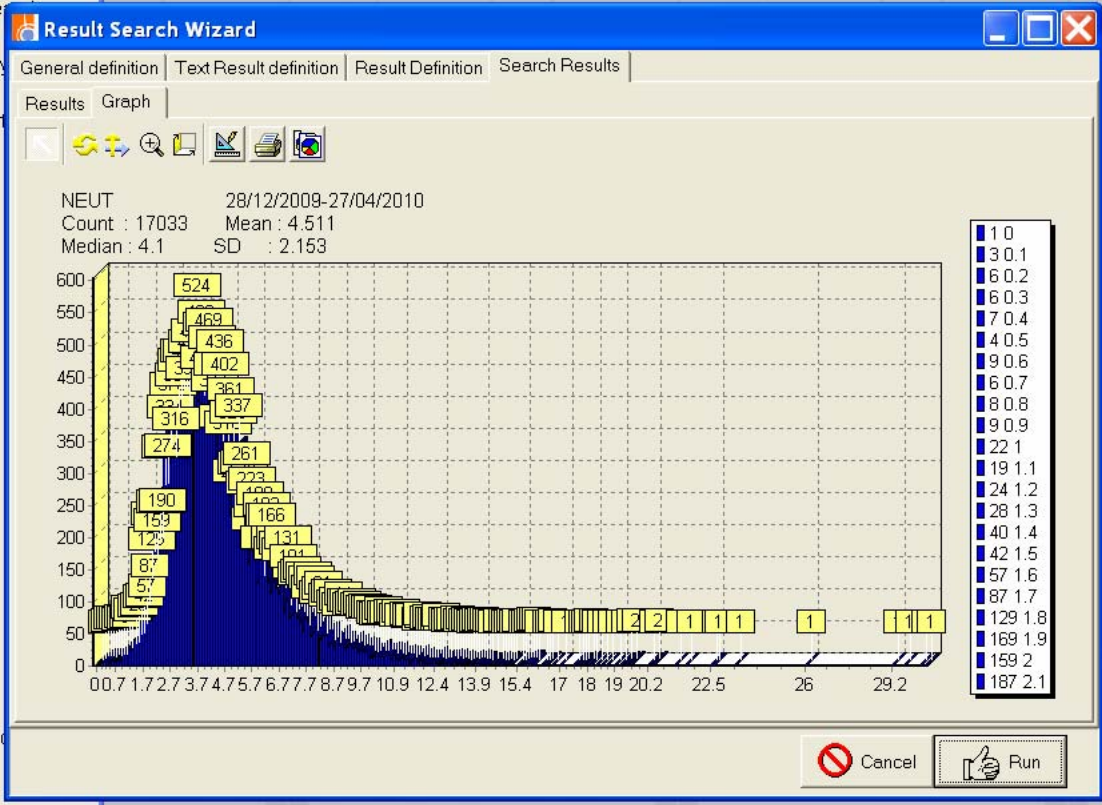
History

- 1995 By pass surgery
- 2008 Thyrotoxicosis
- Fit and well now

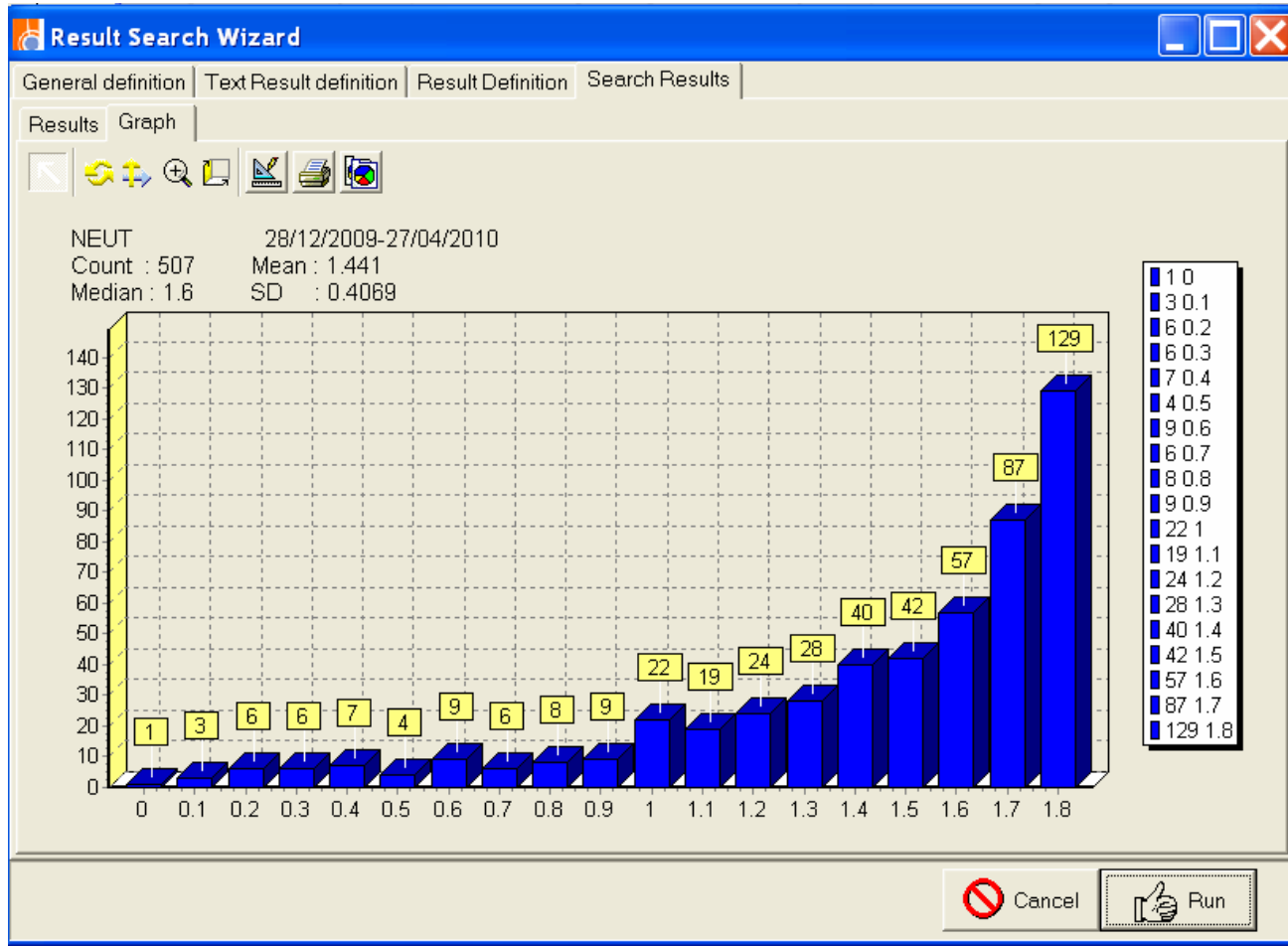


- Select Wizard
- + Doctor
 - Test
 - Department Week Analy
 - Extended Se
 - Monthly Analy
 - Claim Report
 - + Microbiology
 - + Chemistry
 - + Cytology
 - + Histology
 - + Billing
 - + User
 - + Discard
 - + Visits
 - + Comment Search
 - + Multi Site
 - + Histo/Cyto Correlati
 - + Turn Around
 - + Adhoc Query

ALL NEUTROPHIL COUNTS 28/12/09-27/4/10



NEUTROPENIAS



Result Search Wizard

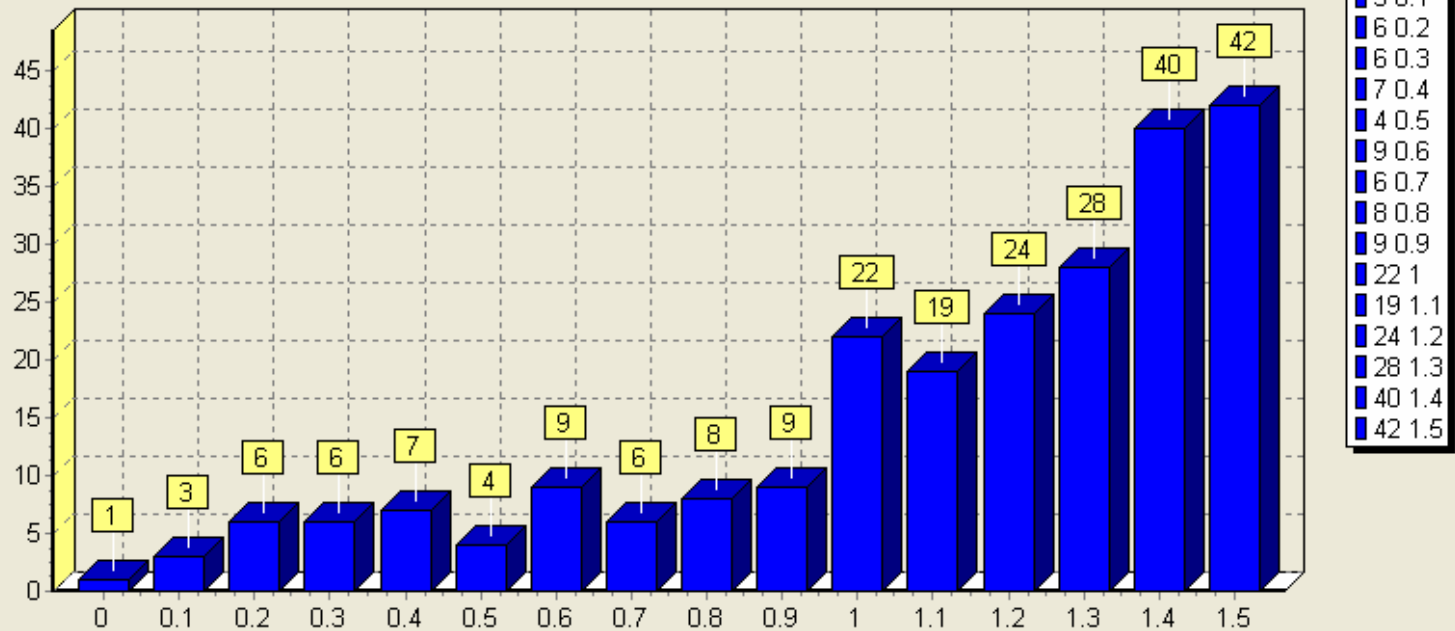


General definition | Text Result definition | Result Definition | Search Results

Results | Graph



NEUT 28/12/2009-27/04/2010
Count : 234 Mean : 1.108
Median : 1.2 SD : 0.3817



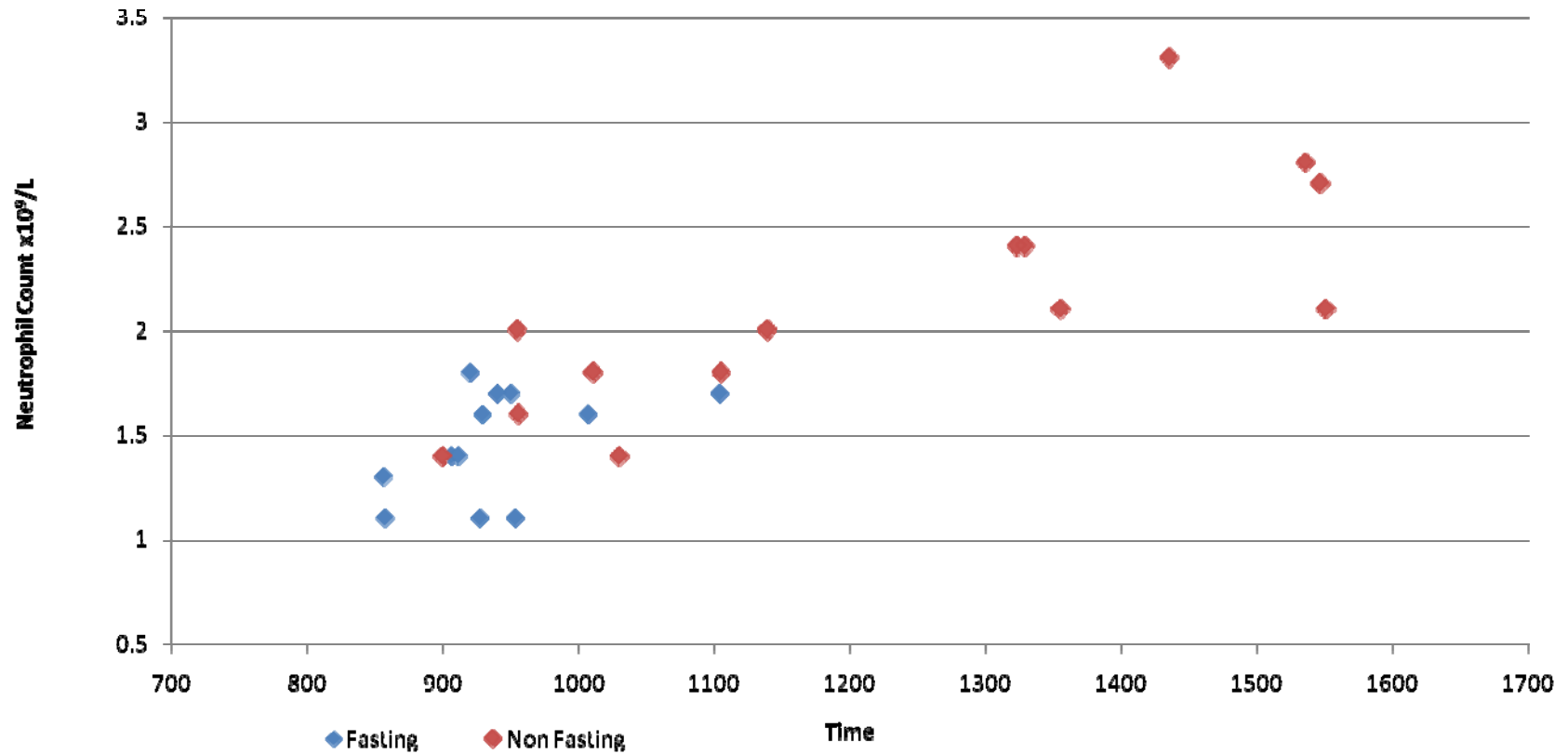
Cancel

Run

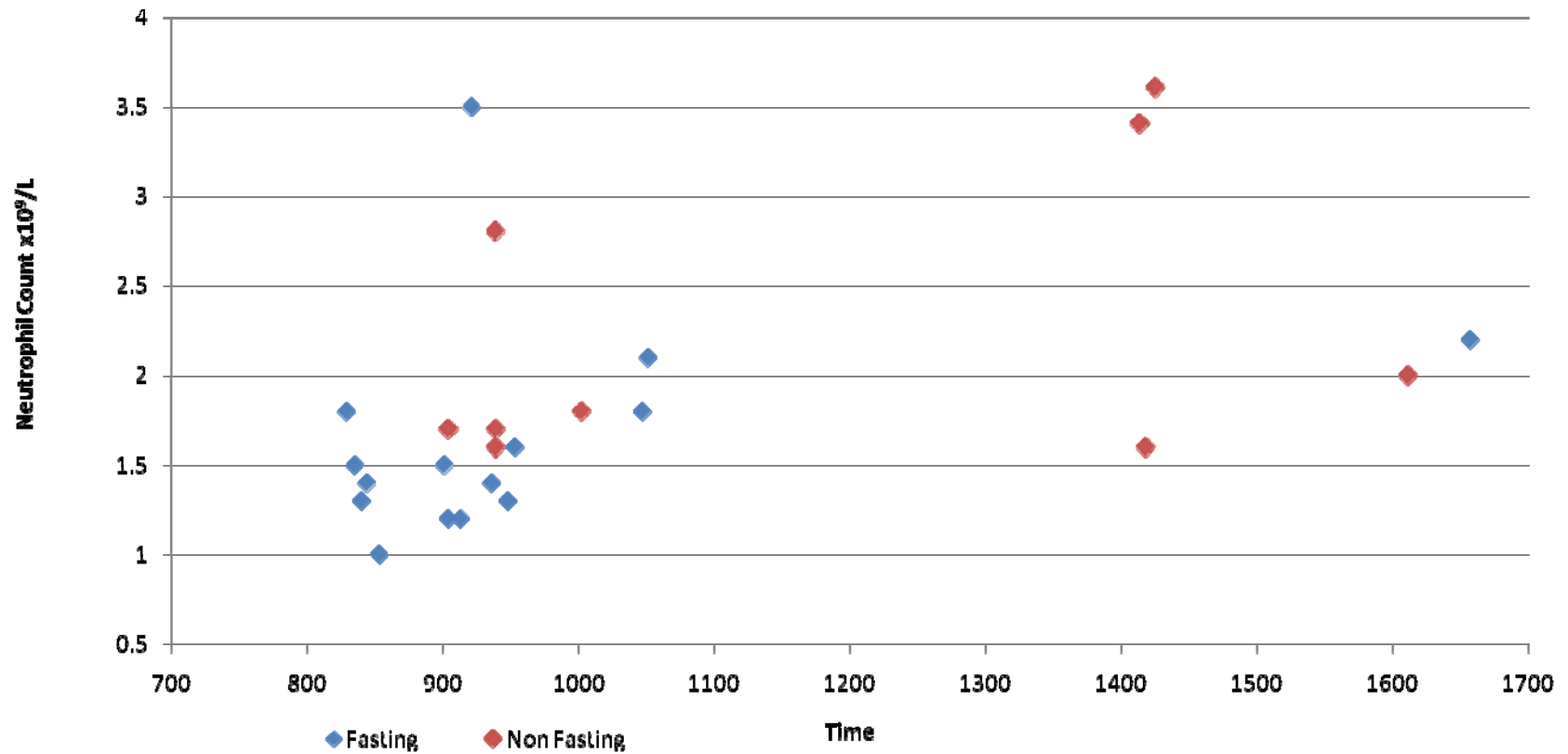
Labsolutions Data Base

- 28.12.2009 – 27.4.2010
- Neutrophil counts 1.5 or less
- Total 234 or 1.36% Patient visits
- Exclude
 - Haematology Patients
 - Oncology Patients
 - Children
 - Viral Infections
- 102 Patient visits

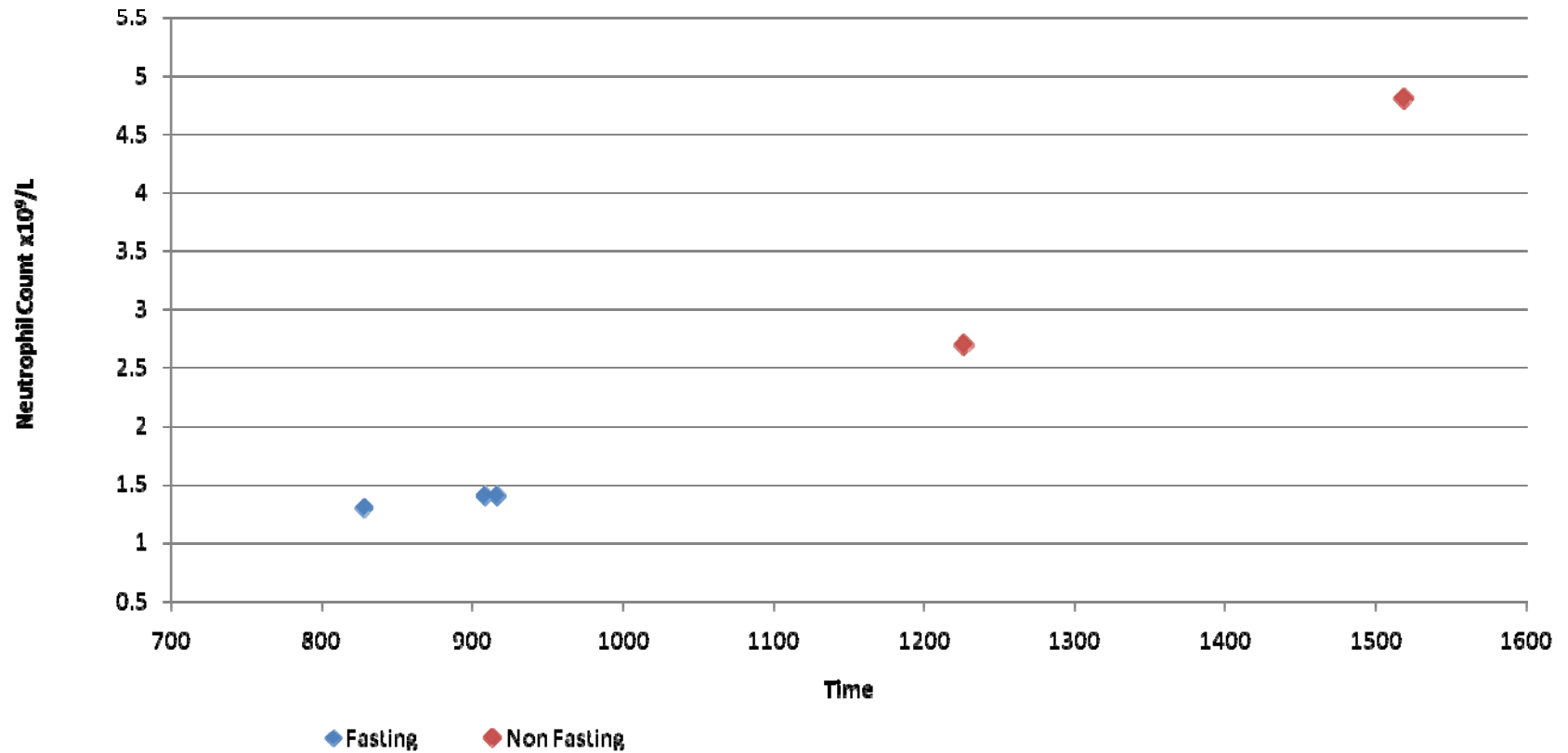
60 yr old female with high lipids.



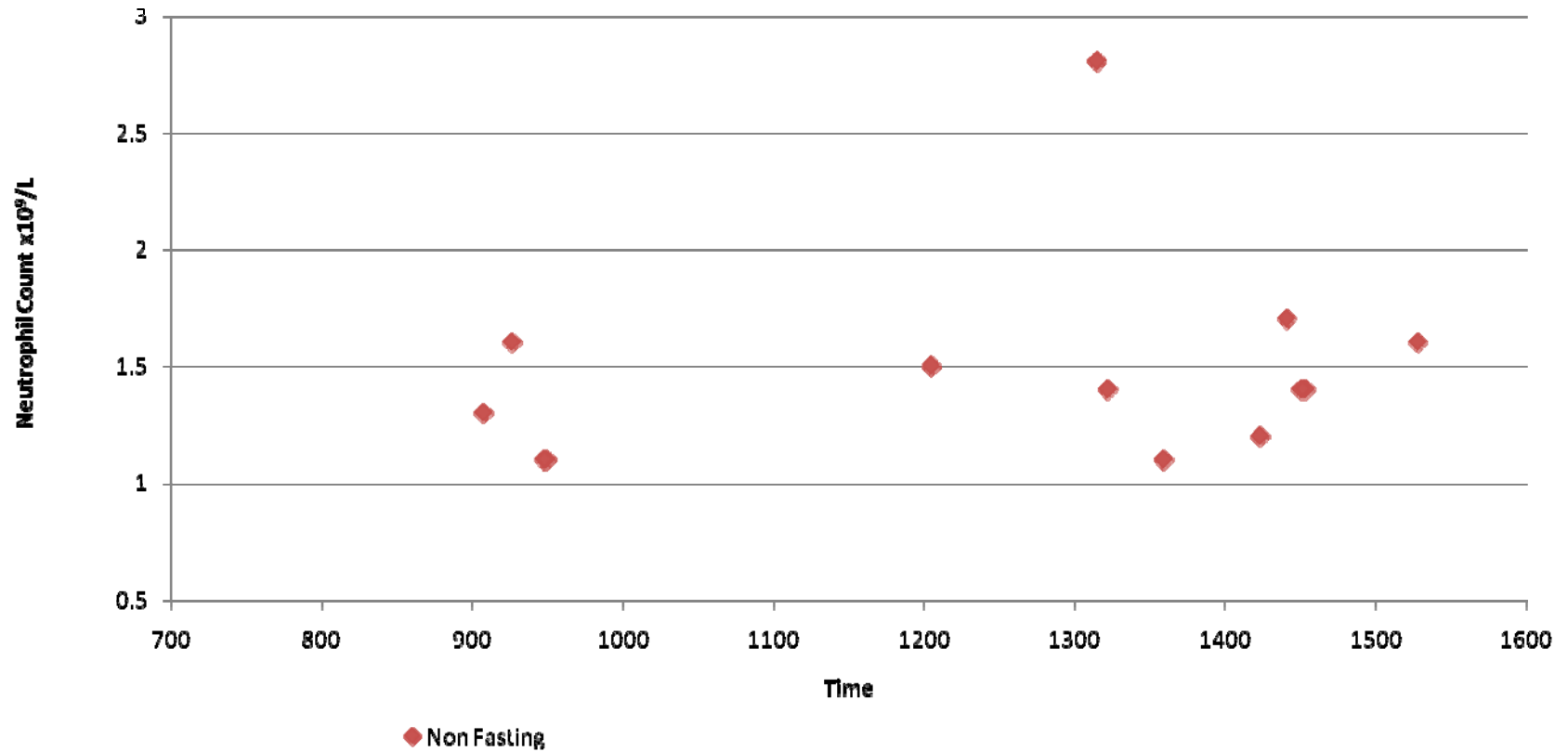
40 yr old male chronic benign neutropenia



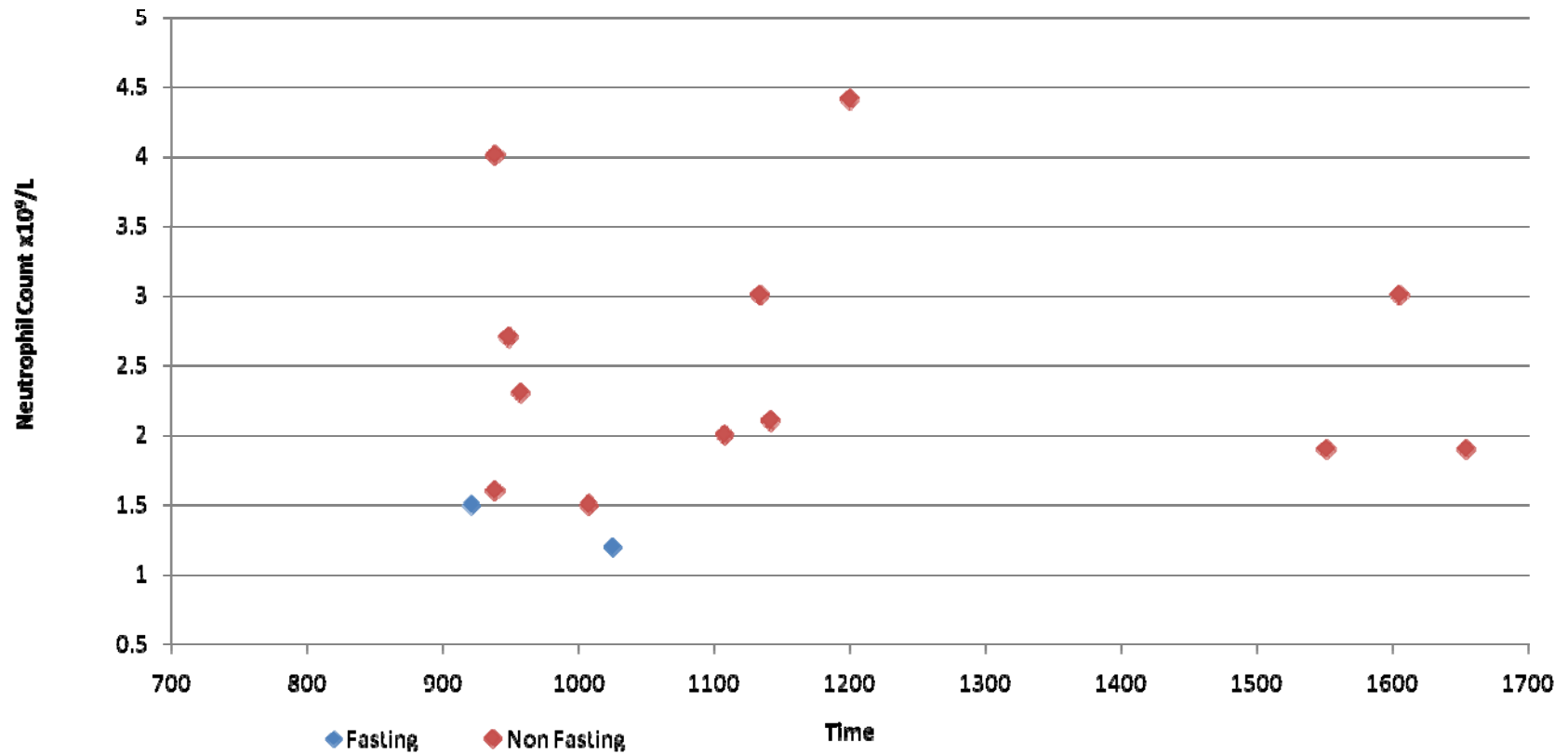
66 yr old female



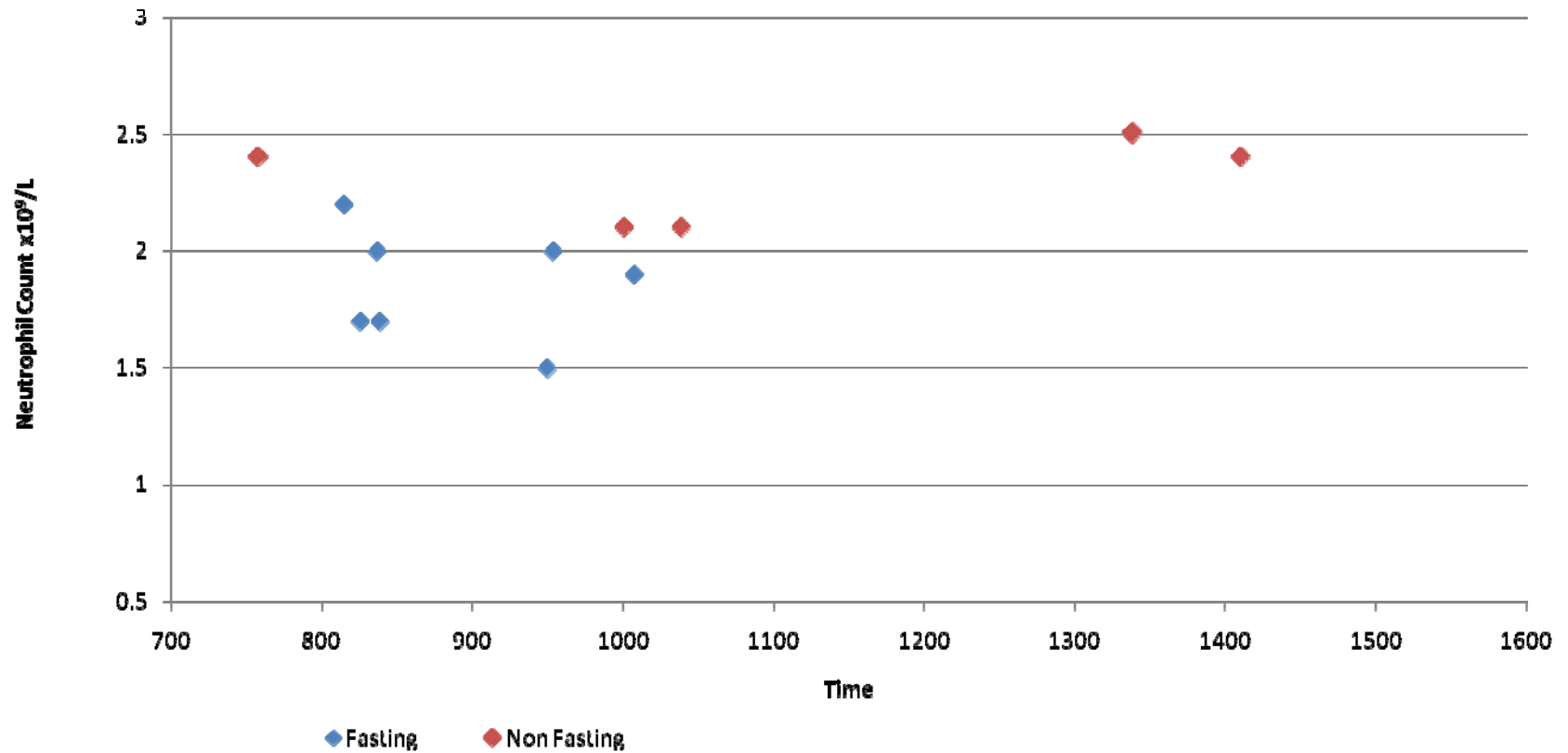
75 yr old female



55 yr female old epilim and thyroxine



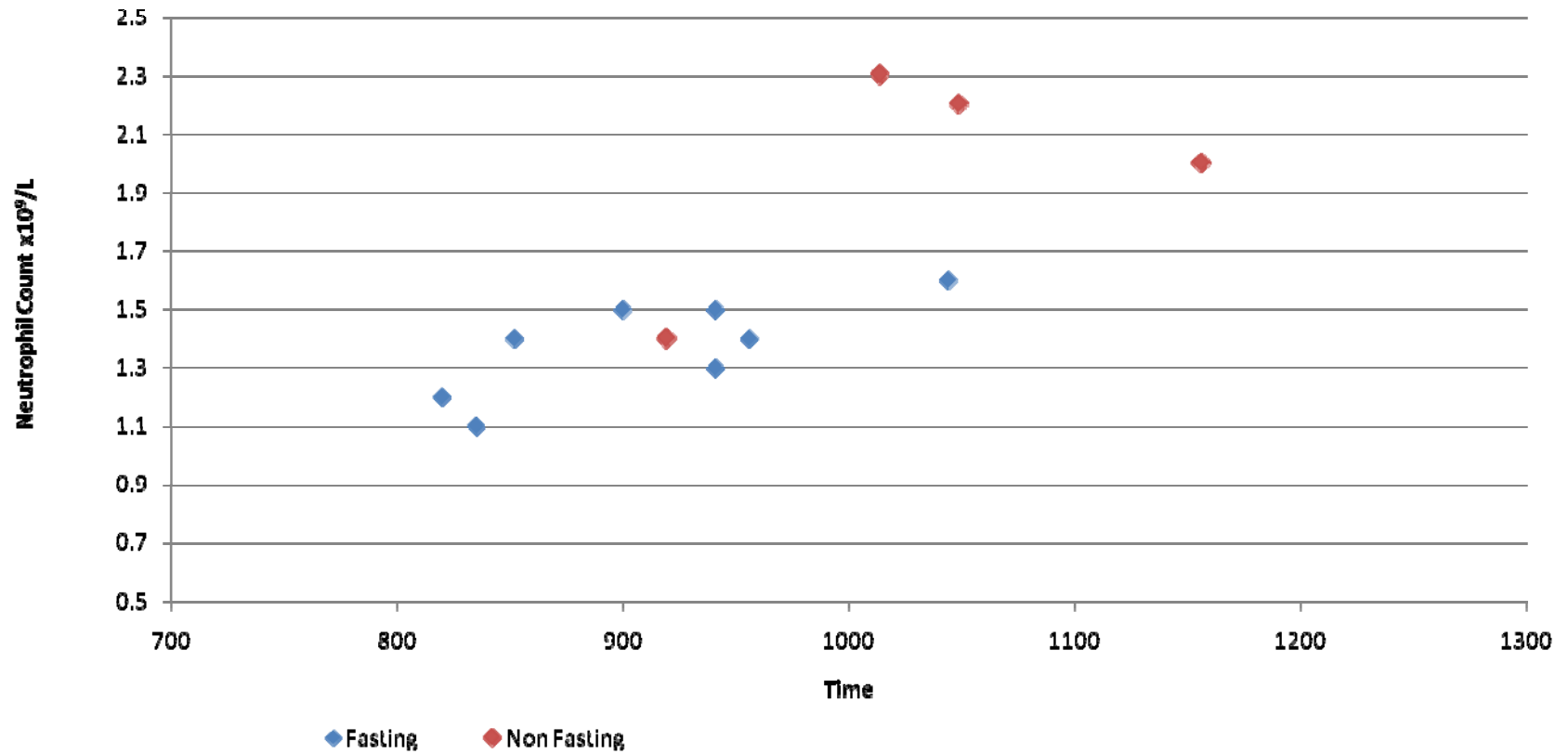
75 yr old male



58 yr old male

| Time | Fasting /Non fasting | Neutrophil count |
|------|----------------------|------------------|
| 0833 | F | 1.1 |
| 0856 | F | 1.8 |
| 0835 | F | 1.5 |
| 0820 | NF | 1.5 |
| 0836 | NF | 2.5 |
| 0822 | F | 1.2 |
| 0810 | NF | 2.3 |

61 yr old female



Neutropenic Population

Predominate groups in this study

- Fasting Patient
- Diabetes
- Hyperlipidaemia/cholesterolaemia
- Older age group
- Females

Statland et al. Am J Clin Pathology 69:48–54 1977

“measured the biological variation in healthy normal subjects and reported a diurnal variation of as high as 50%”

Barbara Bain

Biological factors

- The WBC and neutrophil count are higher in the afternoon than in the morning.
- WBC, neutrophil count and monocyte count fall steeply during menstruation.
- Menopause – The WBC and neutrophil count fall.

Dacie and Lewis

- Diurnal variation – 10% for neutrophils
- Total leucocyte minimum counts in the morning with the subject at rest.
- Random exercise may raise the count slightly.
- Strenuous exercise causes rises of up to $30 \times 10^9/L$.
- The effect of ingestion of food is uncertain.

Psychiatric Studies

- Risperidone–induced morning pseudoneutropenia
- Circadian rhythm of white blood cells during clozapine treatment

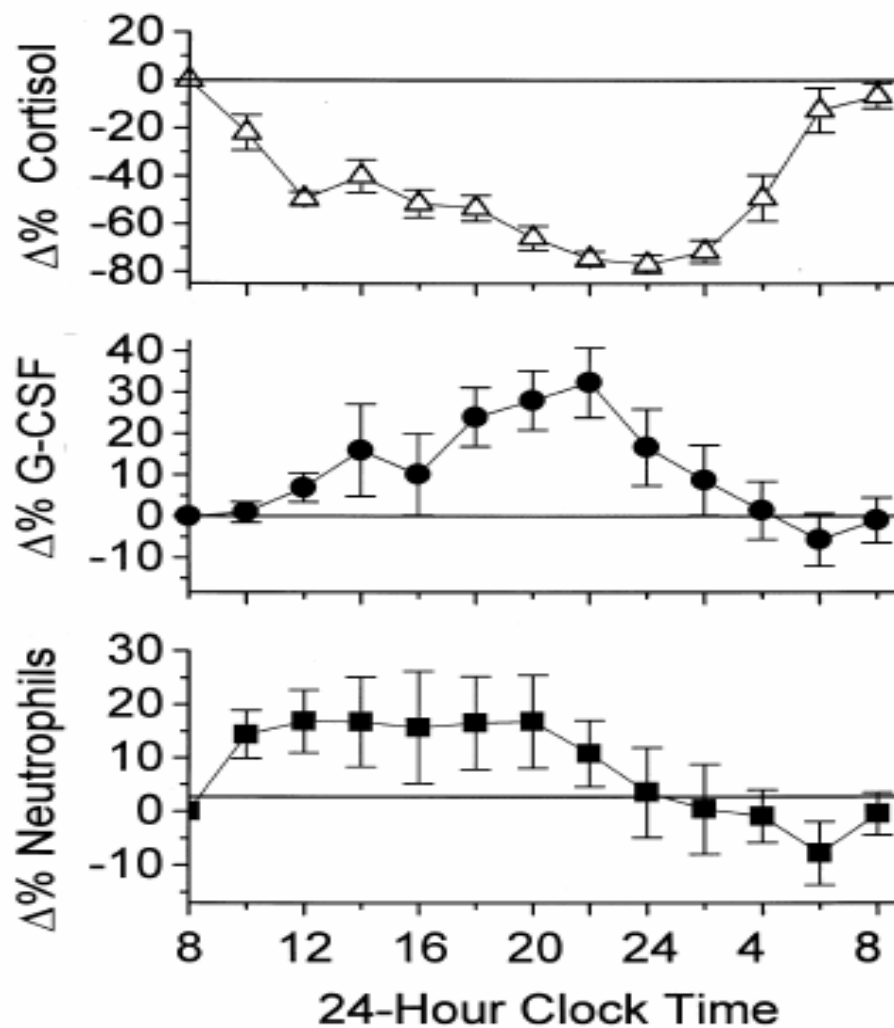


Fig 1. Diurnal changes ($\Delta\%$) of cortisol, granulocyte colony stimulating factor (G-CSF) plasma levels and neutrophil counts (mean \pm SEM from 11 healthy subjects).

Diurnal Variation

- Under-estimated.
- Consider time of collections in neutropenic patients.
- Result in unnecessary repeats and investigations.
- Some drugs may enhance it.