

Evaluation of the cervical vertebral maturation stage of Japanese

=1st review staging of a cervical vertebrae maturation =

Saito Orthodontic Office

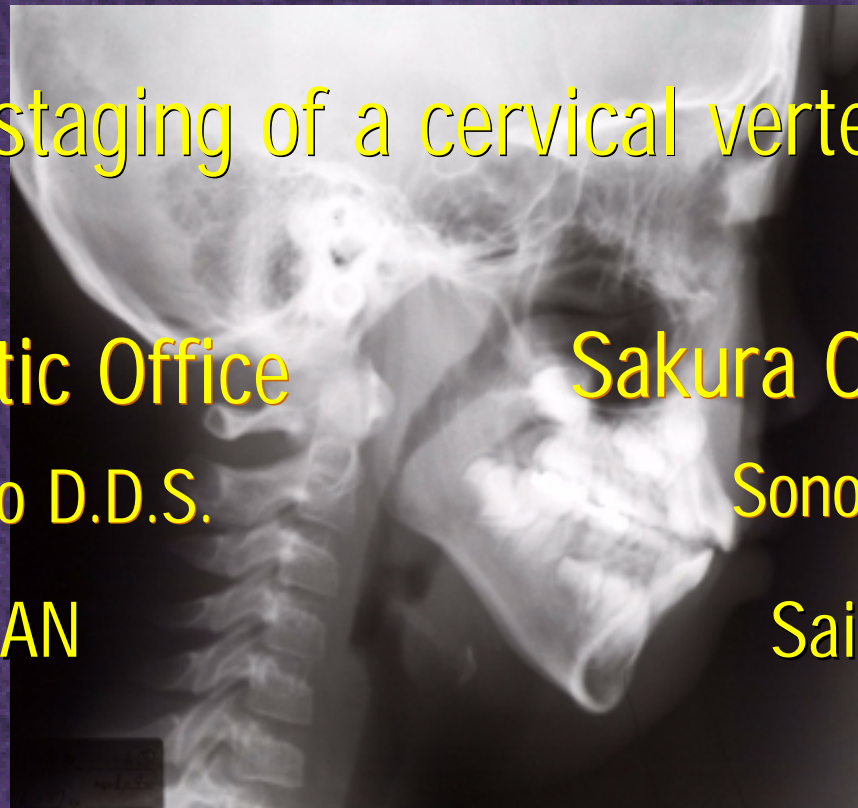
Takeshi Saito D.D.S.

Chiba JAPAN

Sakura Orthodontic Office

Sonoko Miyama D.D.S.

Saitama JAPAN



Prediction of Individual Growth

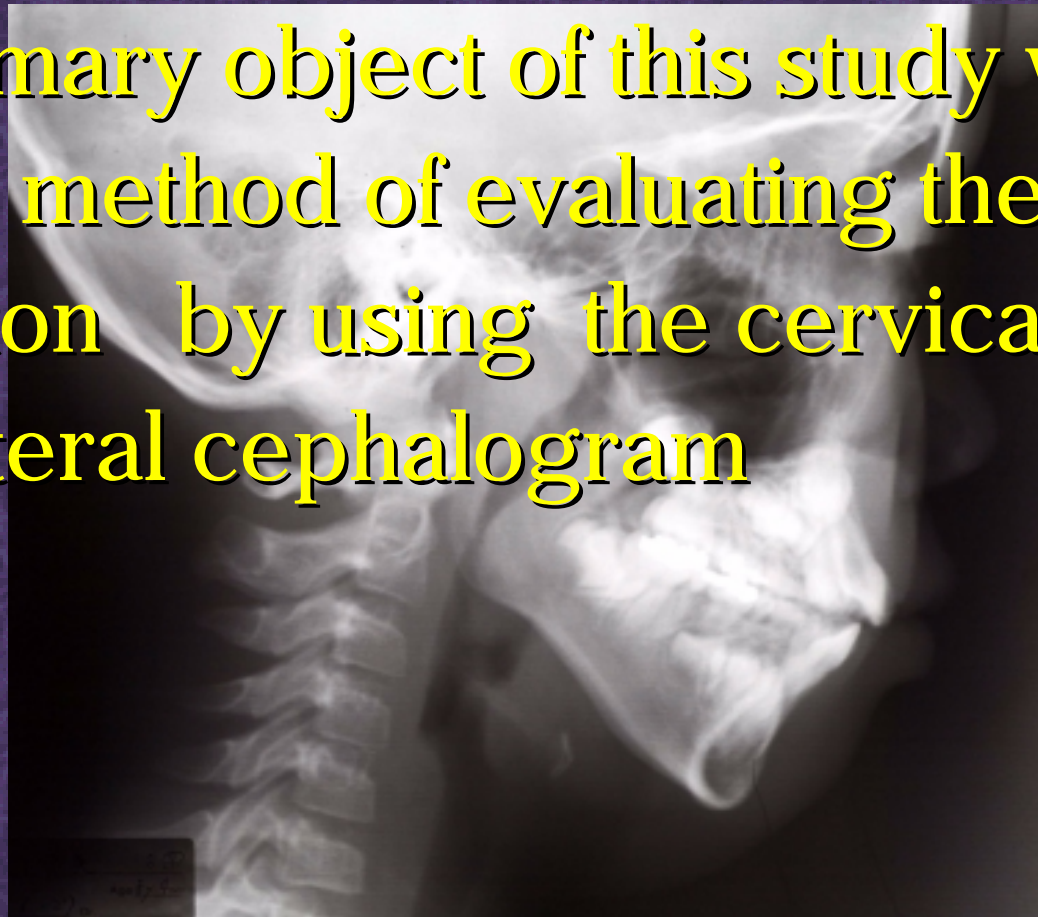
Did it expected the peak
of adolescent growth?

Did the growth
complete?



Object

The primary object of this study was to create a method of evaluating the skeletal maturation by using the cervical vertebrae at the lateral cephalogram



For

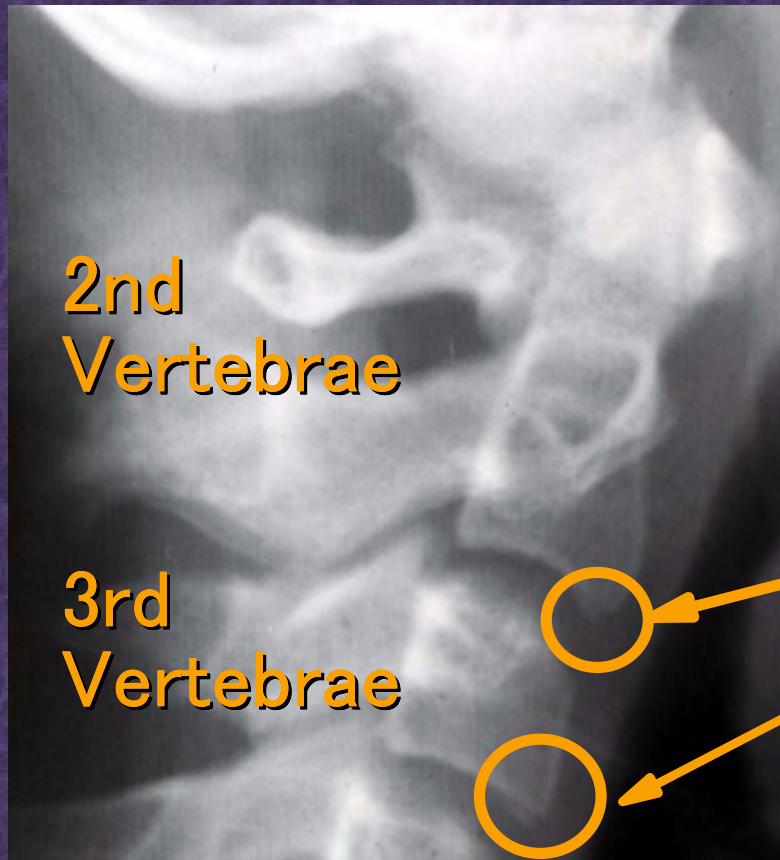
Prediction of Individual Growth

Sample

sex	Female	Male	total
age			
8	15	14	29
9	12	12	24
10	11	11	22
11	12	9	21
12	8	9	17
13	6	8	14
total	64	63	127

- There is not a problem in systemic growth development. N: number
- Unartificiality was extracted irrespective of malocclusion.

Methods



Classification

3 stage

2 substage

Bone Edge Plate

(+) or (-)

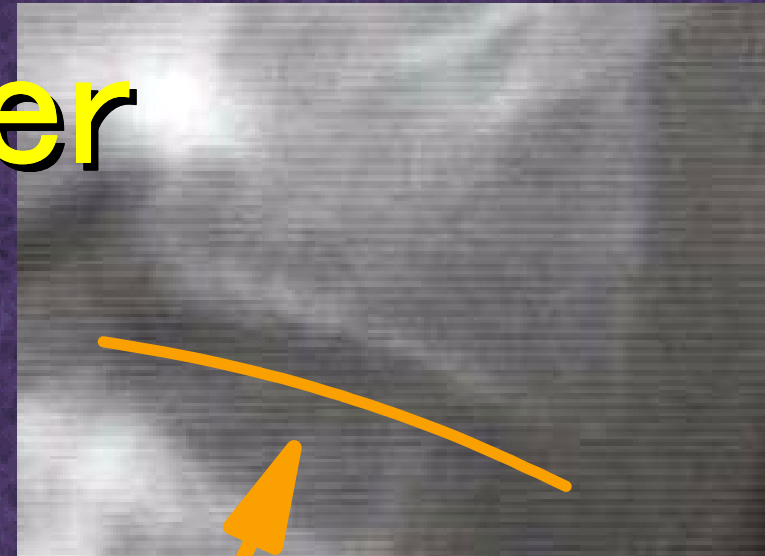
Lateral Cephalogram

Stage I

Tapered corner



Vertebral Body



2nd Vertebrae

Flat



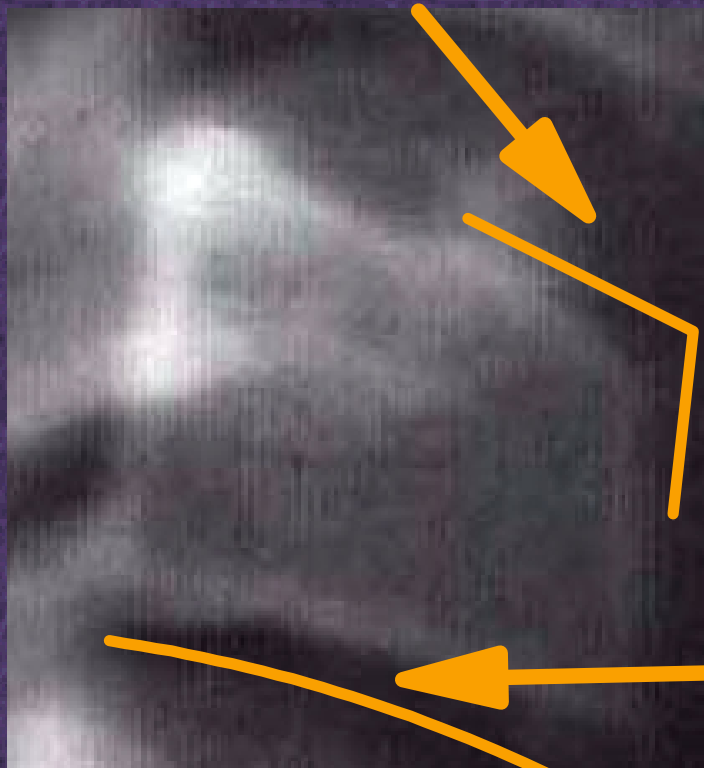
stage I

Stage II

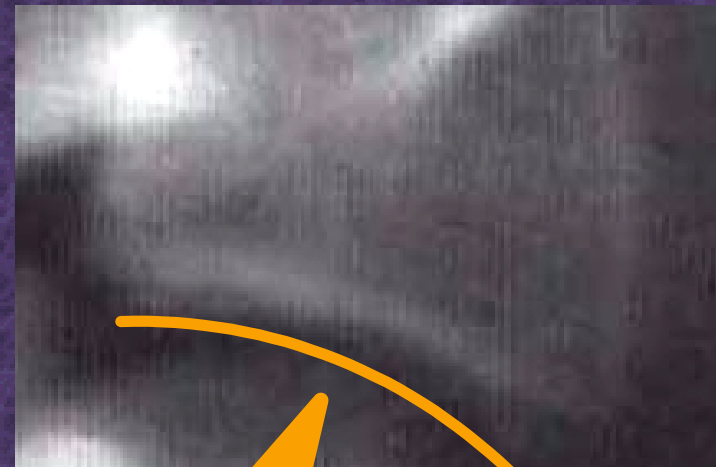
Edged corner



stage II



Vertebral Body



2nd Vertebrae

Distinct Concavity

Stage III

Heights are greater than widths



stage III



Vertebral Body



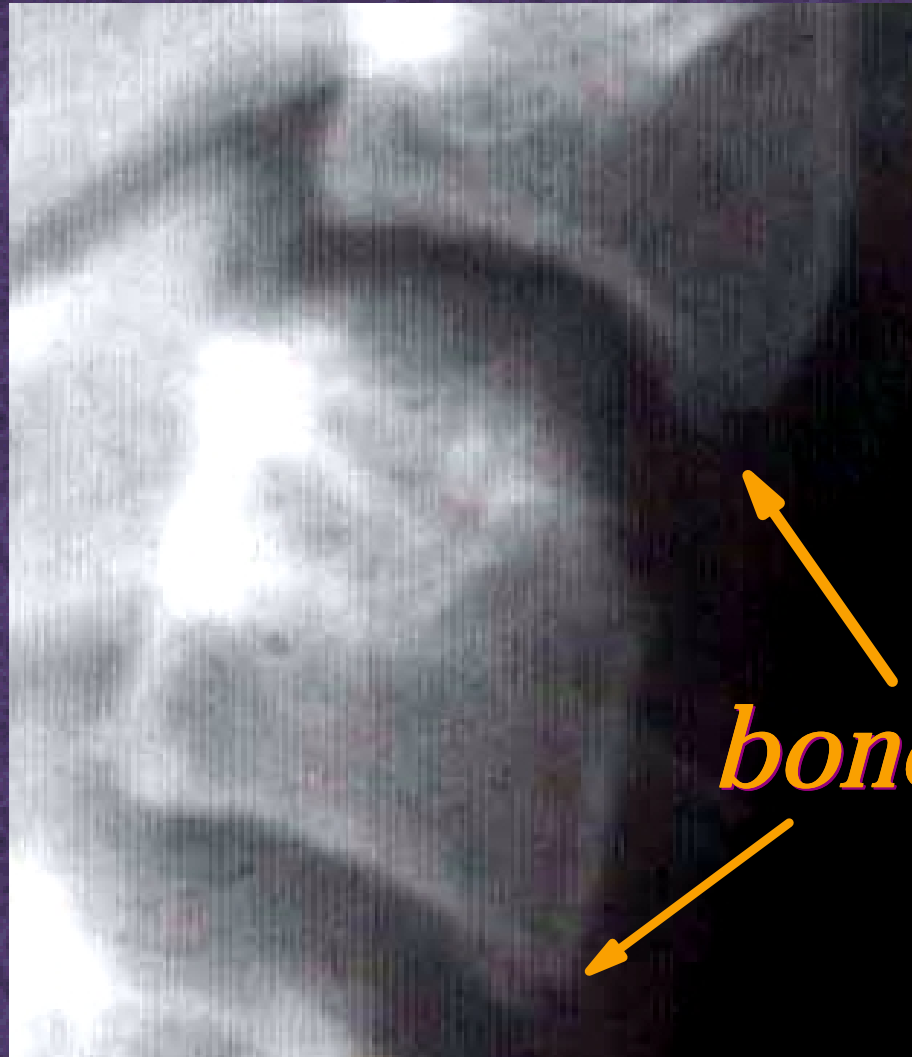
2nd Vertebrae

**Deep
Concavity**

Bone Edge Plate



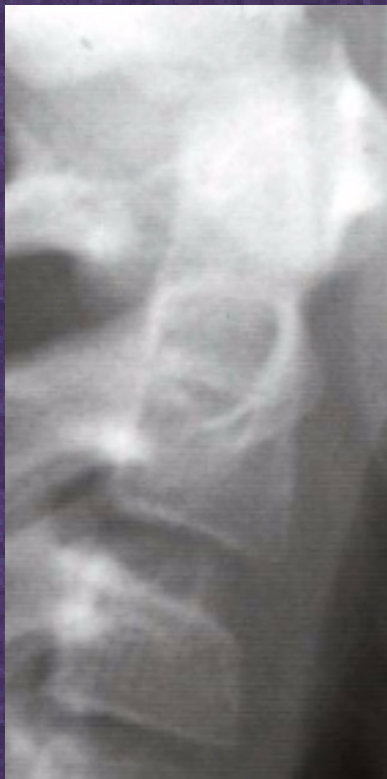
stage III(+)



bone edge plate

Clinical Case

Female



stage I

8y4m



stage II

9y11m



stage III(+)

11y3m



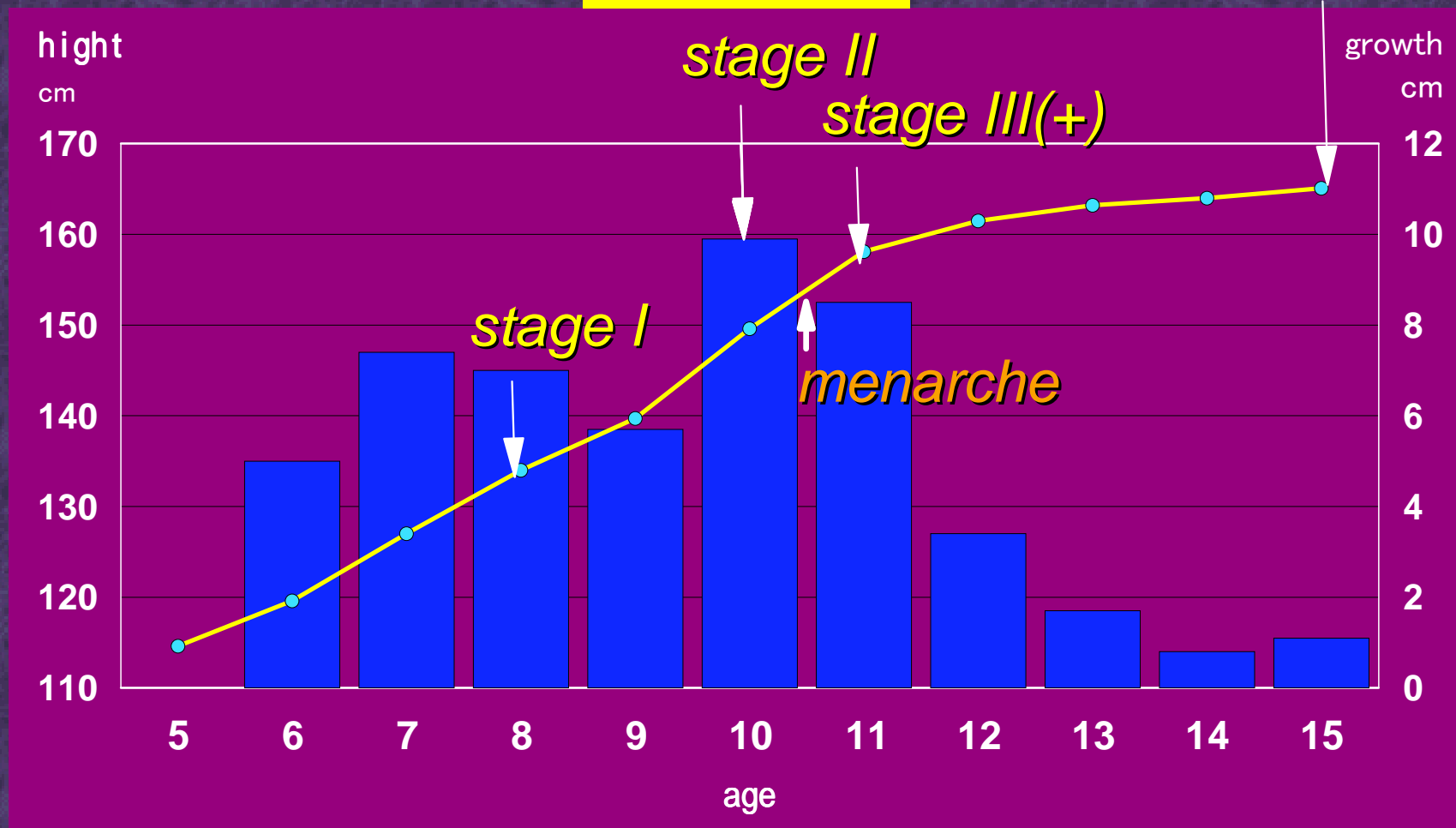
stage III

15y2m

Clinical Case

Female

stage III(-)



Correlation coefficient of CVMS

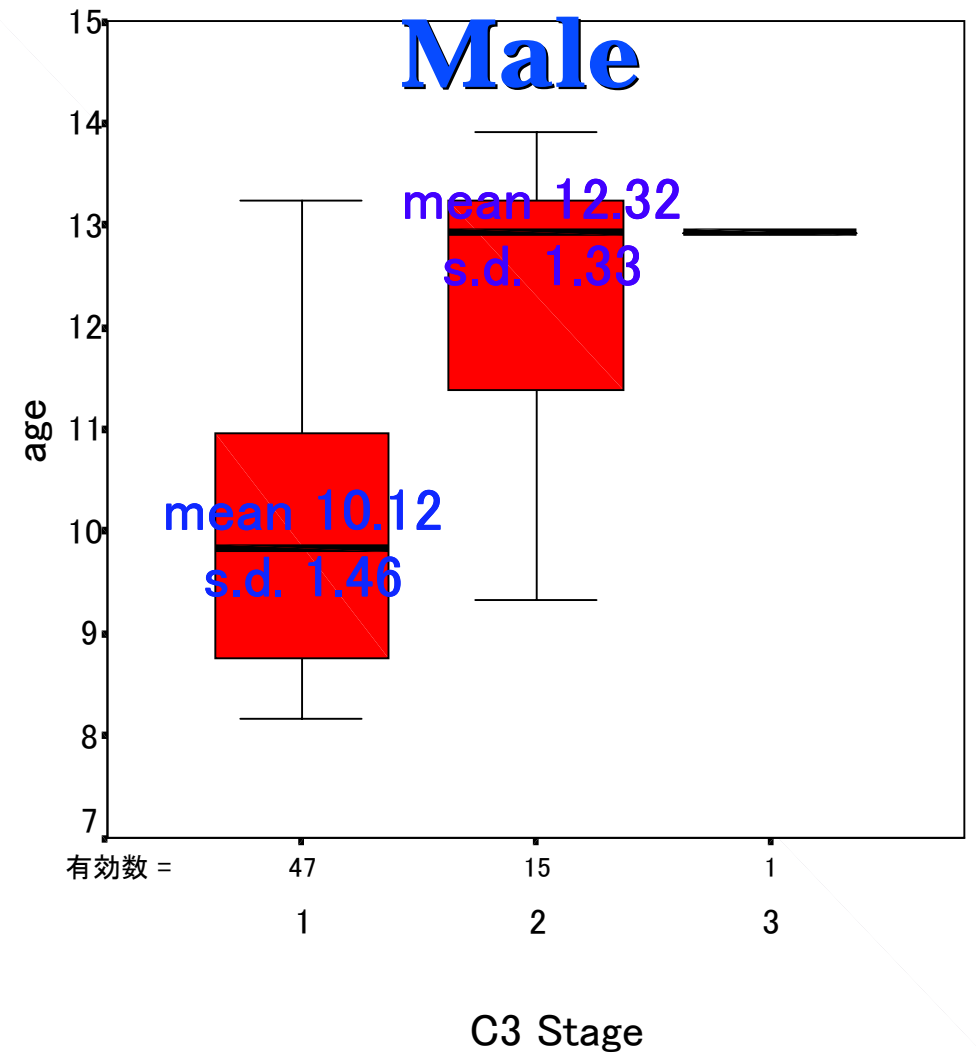
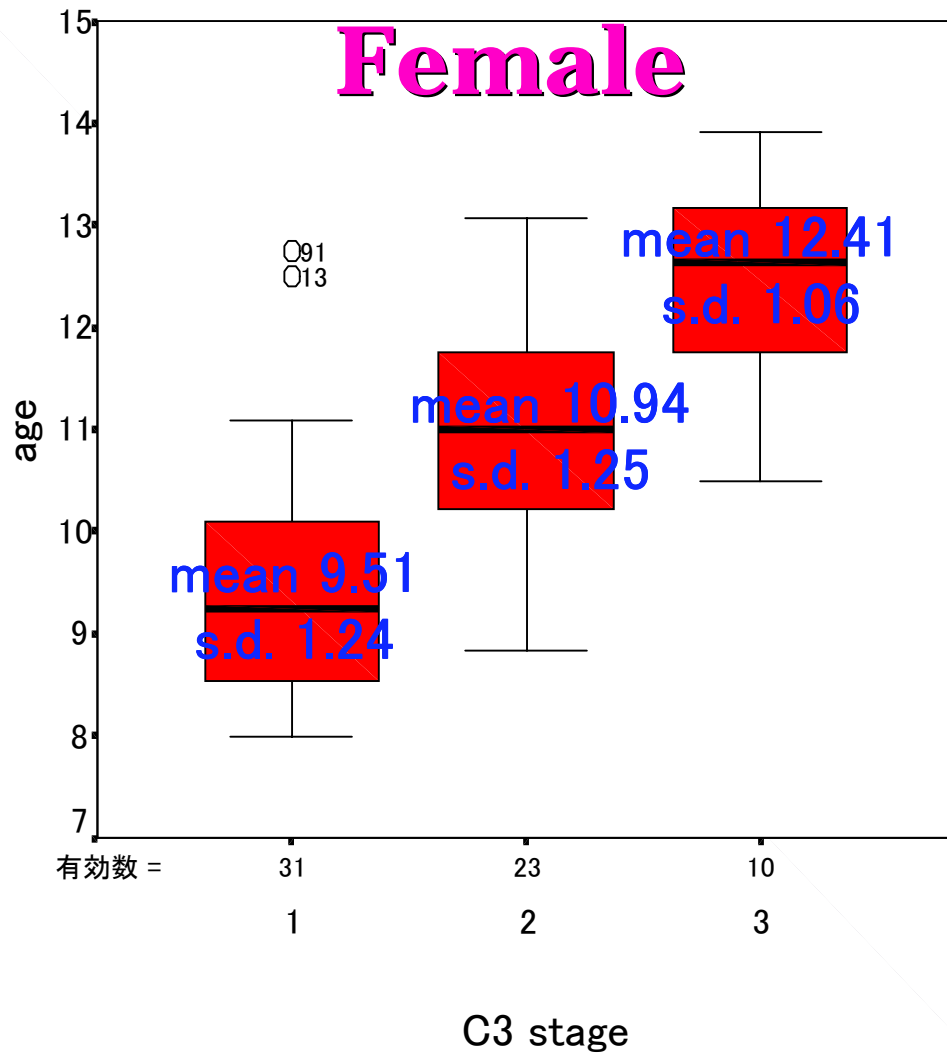
Female	C2	C3	C4	C5
C2	-----	.934 **	.923 **	.921 **
C3	.934 **	-----	.986 **	.986 **
C4	.923 **	.986 **	-----	.999 **
C5	.921 **	.986 **	.999 **	-----

** : p < 0.01

Male	C2	C3	C4	C5
C2	-----	.999 **	.948 **	.947 **
C3	.999 **	-----	.948 **	.947 **
C4	.948 **	.948 **	-----	.998 **
C5	.947 **	.947 **	.998 **	-----

** : p < 0.01

C3 CVMS to age



C3 CVMS to age

Female

1.44year *

1.46year *

Stage I

Stage II

Stage III

9.51year

s.d. 1.24

10.94year

s .d. 1.25

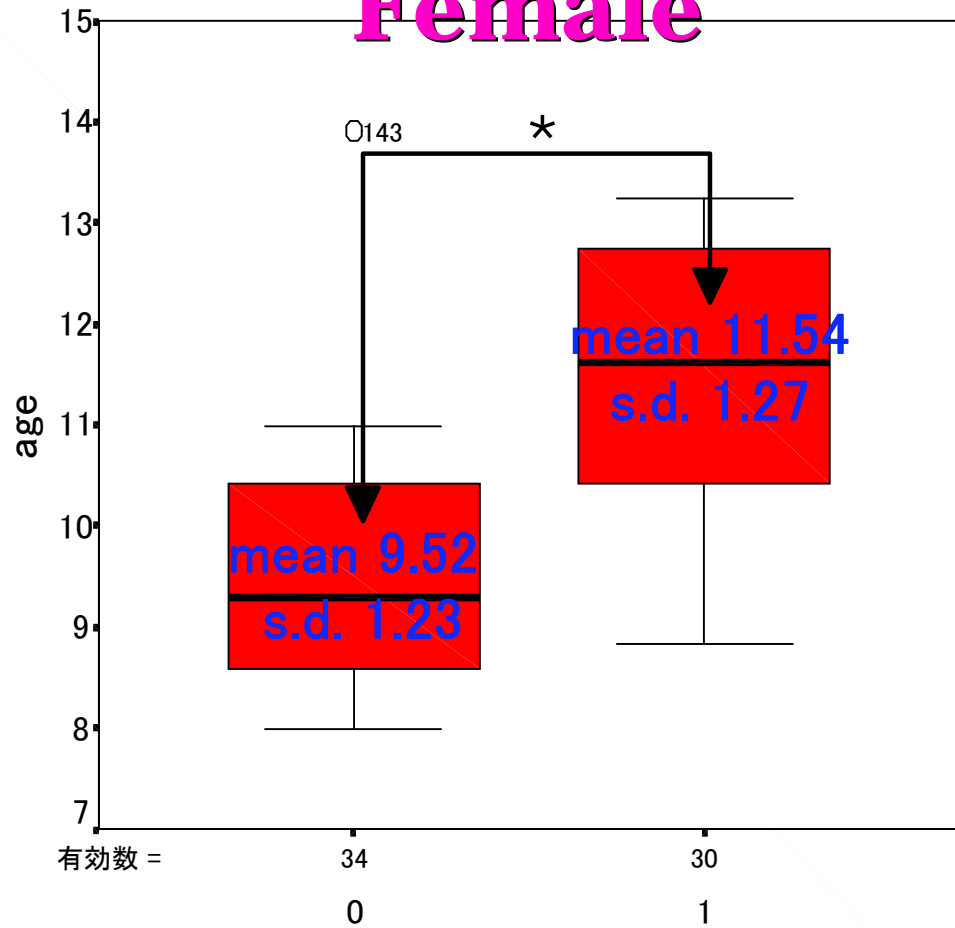
12.40year

s.d. 1.06

* Bonferroni $p < 0.05$

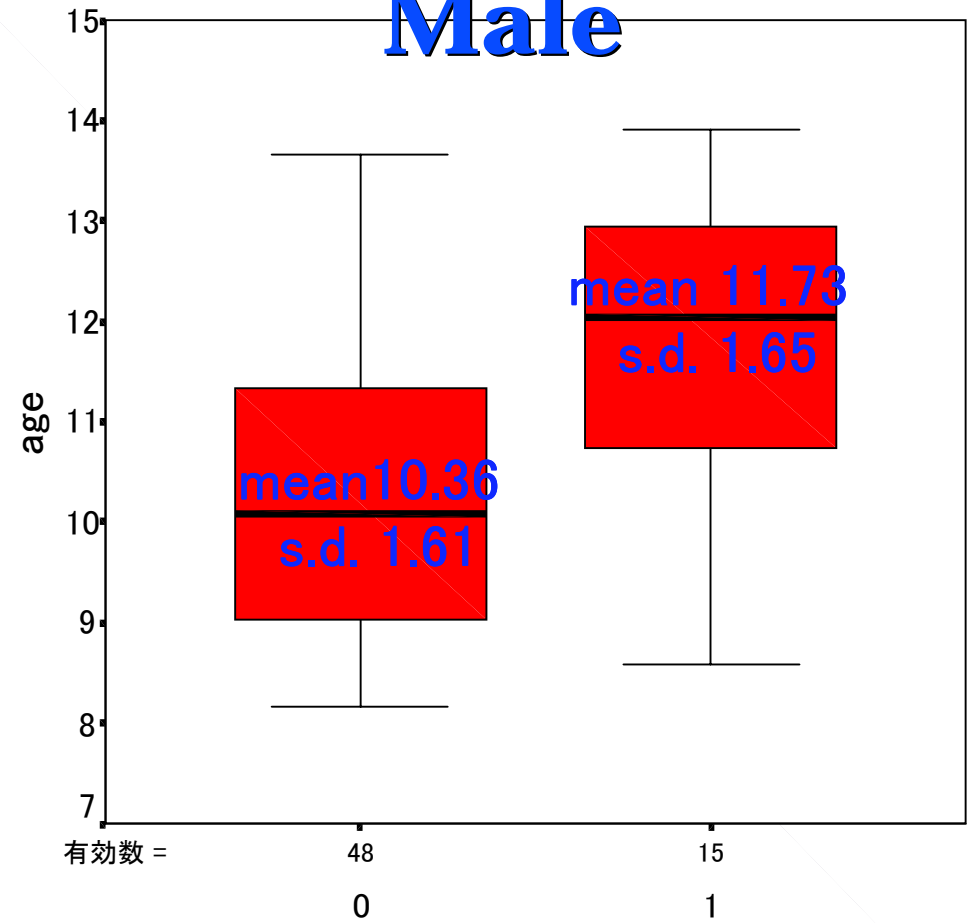
C3 Bone Edge Plate to Age

Female



C3 BEP

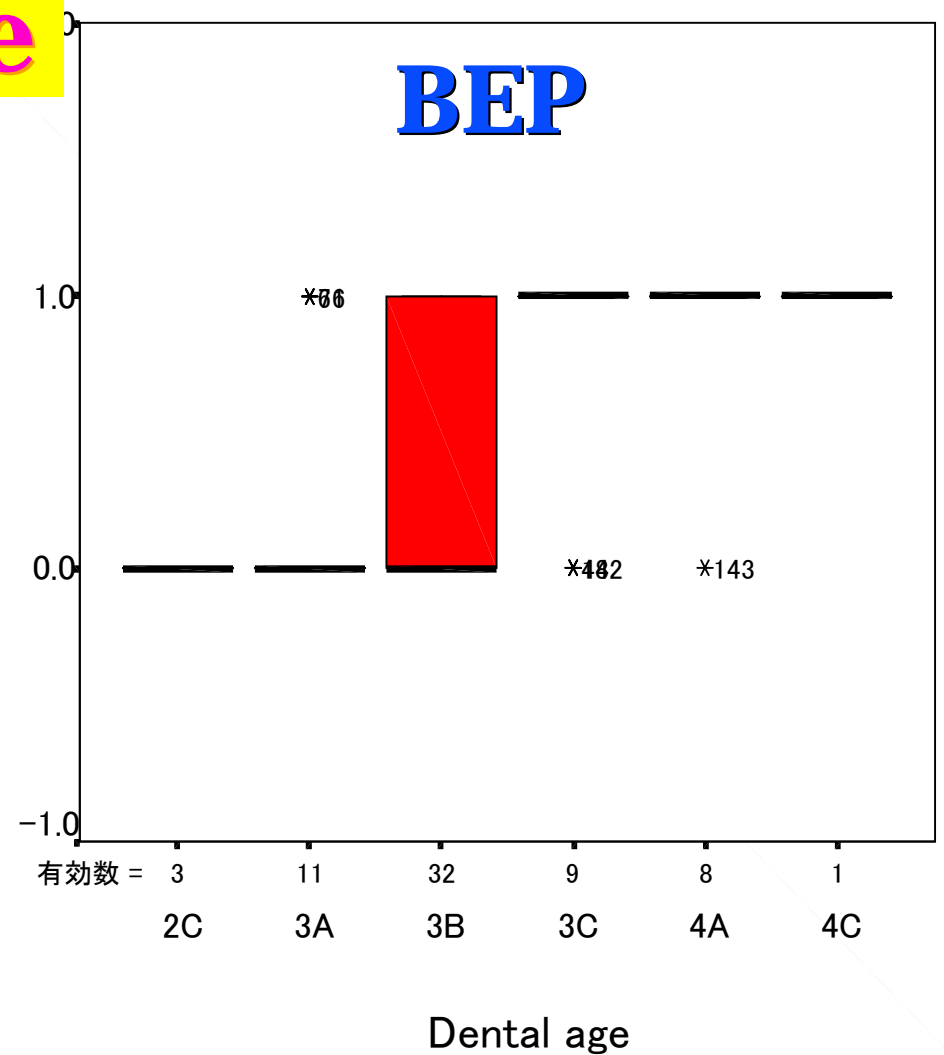
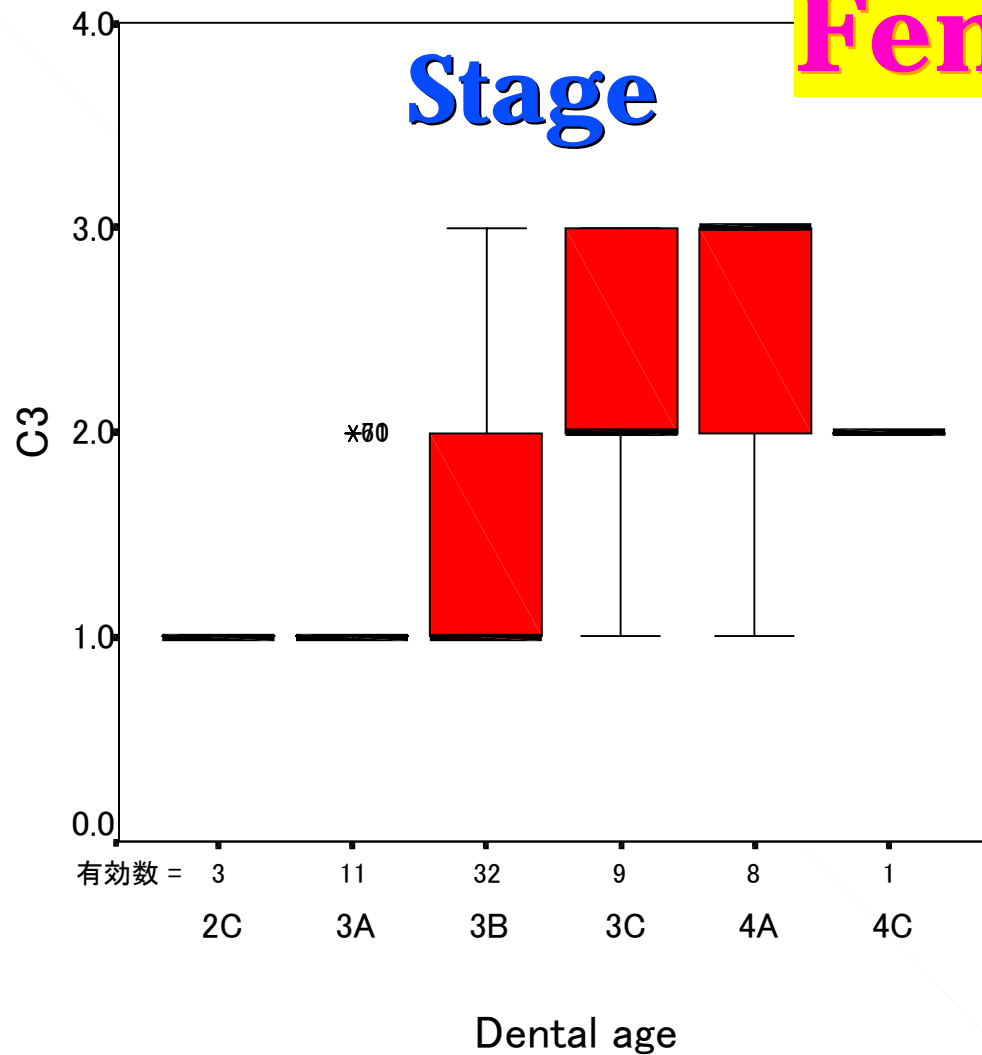
Male



C3 BEP

C3 Dental age to CVMS

Female



Conclusion

The possibility was suggested that CVMS is able to use of the prediction of the individual growth potential at Female.

A special word of thanks is due to Dr. Takaki Takashi for guidance on the statistical analyses employed for this study.