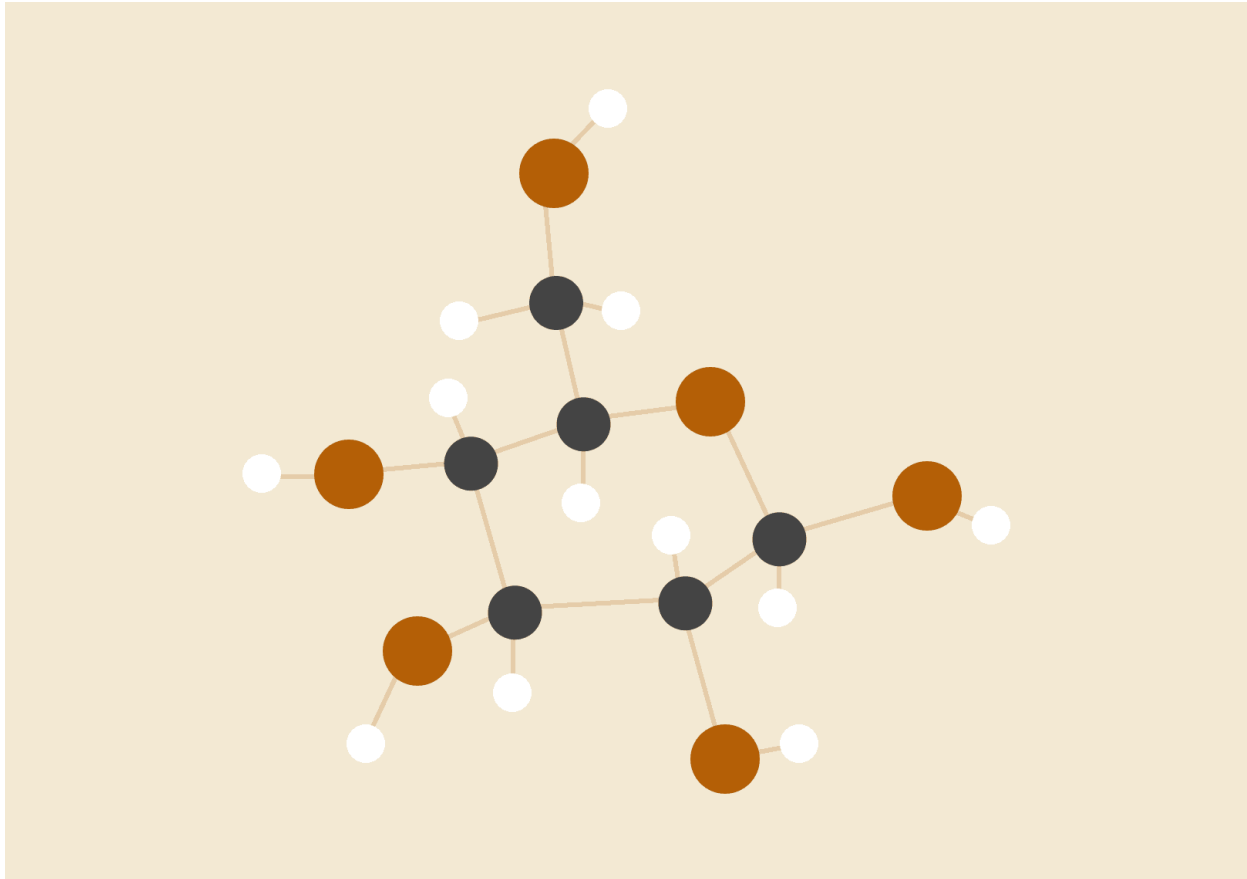


CELL LAB REPORT 2

Allometric vs Isometric Growth



Mohammad Ayesh 1210429

April,10,2022

INTRODUCTION

The shape of an organism is largely dictated by the relative growth rates of different body parts. Prolonging developments, Allometric growth is a term used to describe the changing relative rates of growth. It is a phenomenon in which different parts of the body grow at different rates than other parts of the body.

HYPOTHESIS

Are average infant ratios larger as compared to body size and adult ratio size?

MATERIALS

To measure the bodily components in this experiment, we employed a variety of measuring instruments. Then, after taking measurements for all groups and drawing a table of the data we've obtained, we can take the average to compare the ratio between ourselves, the students, and the newborns, which will offer information to decide whether the selected body parts grow allometrically or isometrically.

OBSERVATION/CONCLUSION

After collecting data, we discovered that the majority of the parts grow allometrically (Length/height, Head circumference, Upper limb, Hand length, Lower limb, Crown-rump length, Foot length), but the Span growth is mostly isometric. We also discovered that the sizes of humans in general are close in different parts.

DATA OF ALL STUDENTS AND INFANT

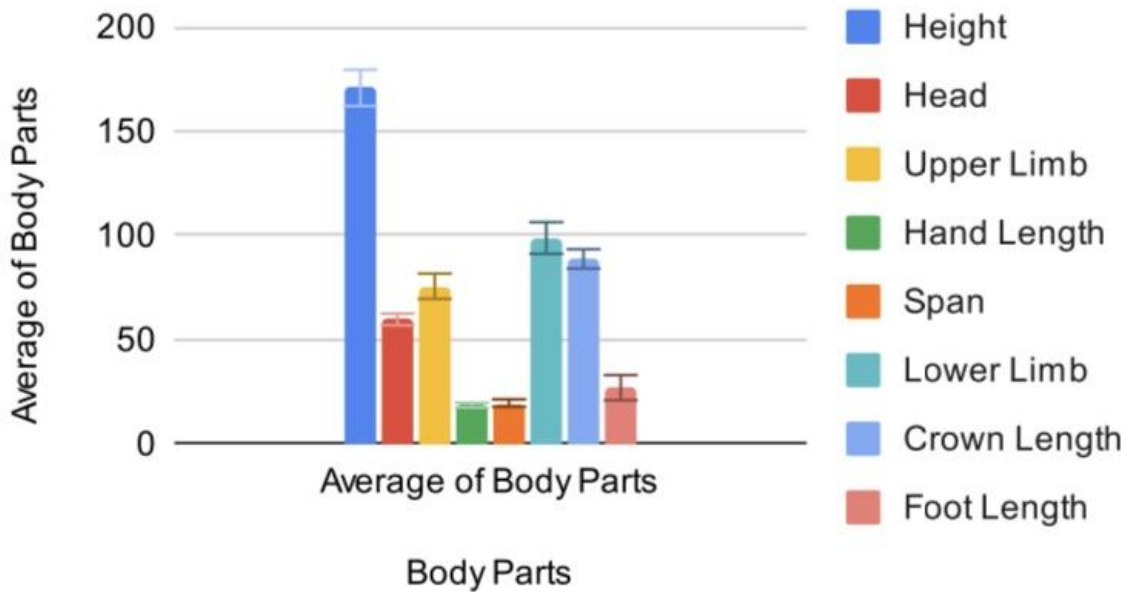
Name	Y	A	W	J	N(ad)	S	S.A	N.A	
Body Part									
Height		169	158	170	163	168	163	173	158
Head Circmferen		58	62	57	62	58	61	62	58
Upper Limb		72	65.5	77	75	80	84	74	67
Hand Length		19	16.5	19	19	18	18	19	18
Span		19	18	19	20	18	16	21	17
Lower Limb		99	95	97	97	100	102	92	76
Crown Length		84	89	91	89.5	92	86	87	81
Foot Length		26	26	27	26.5	29	25	27	29

MA	K	A	D	N	D	S	E	MM	
	175	190	189	170	170	177	159	166	175
	59	60	66	56	56	63	54	60	61
	82	84	89	71	78	74	68	71	76
	20	20	21	19	18	19	16	18	19
	19	20	20	18	21	22	20	24	20
	103	112	110	100	107	104	98	100	99
	93	94	100	89	91	94	81	87	86
	31	27	24	24.5	21.5	28	27	26	28

Q	S	Average	Ratio	Baby	Ratio Baby	Standart Deviat	
	171	176	170.7	1	48	1	8.706319544
	59	61	59.7	2.859296482	33	1.454545455	2.811629982
	72	76	75.625	2.257190083	20	2.4	6.062991706
	18	18	18.625	9.165100671	6	8	1.179596273
	21	19	19.6	8.709183673	51	0.9411764706	1.788854382
	90	98	98.75	1.728607595	18	2.666666667	7.60799441
	87	88	88.725	1.923922232	33	1.454545455	4.603988545
	26.7	28	26.96	6.331602374	7.5	6.4	2.348661433
			69.835625	4.246862889			4.388754534

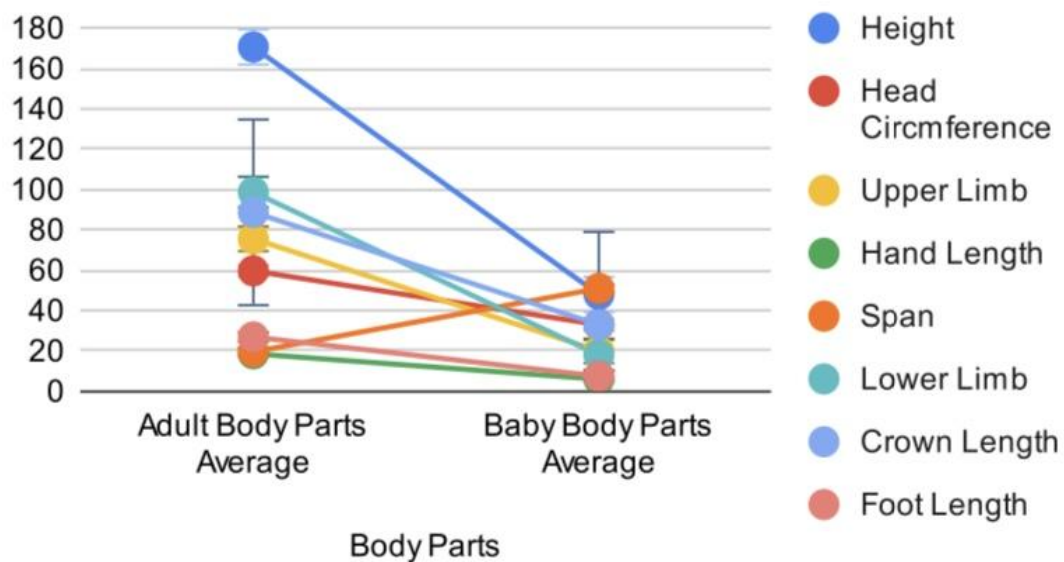
Body Parts	Adult Body Parts	Baby Body Parts Average
Height	170.7	48
Head Circmferen	59.7	33
Upper Limb	75.625	20
Hand Length	18.625	6
Span	19.6	51
Lower Limb	98.75	18
Crown Length	88.725	33
Foot Length	26.96	7.5

Average of Students Body Parts

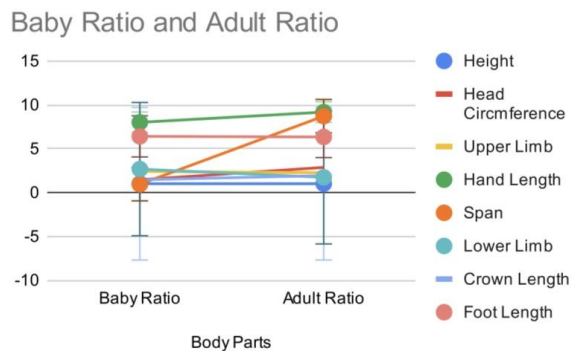


Body Parts	Average of Body	Standart Deviation
Height	170.7	8.706319544
Head Circmferen	59.7	2.811629982
Upper Limb	75.625	6.062991706
Hand Length	18.625	1.179596273
Span	19.6	1.788854382
Lower Limb	98.75	7.60799441
Crown Length	88.725	4.603988545
Foot Length	26.96	2.348661433

Adultt Body Parts Average and Baby Body



Body Parts	Baby Ratio	Adult Ratio
Height	1	1
Head Circmferen	1.454545455	2.859296482
Upper Limb	2.4	2.257190083
Hand Length	8	9.165100671
Span	0.9411764706	8.709183673
Lower Limb	2.666666667	1.728607595
Crown Length	1.454545455	1.923922232
Foot Length	6.4	6.331602374



Baby vs Adult Ratio

