SCHWARZ MODEL ANALYSIS

One of the most useful and simple tools that can be used to diagnosis an Orthodontic Case is the Schwarz Model Analysis. Many clinicians use this Analysis as their screen tool to determine possible treatment solutions. It is also very beneficial to help guide you to choosing the best Appliances to help begin your treatment.

The Schwarz Model Analysis will help you determine if expansion is needed. Expansion can be very helpful to correct a number of issues including:

- Posterior Crossbites
- Constricted Airway
- Lack of space for all the permanent teeth to erupt properly
- Narrow arches
- Crowding
- Improper space for the tongue to function normally

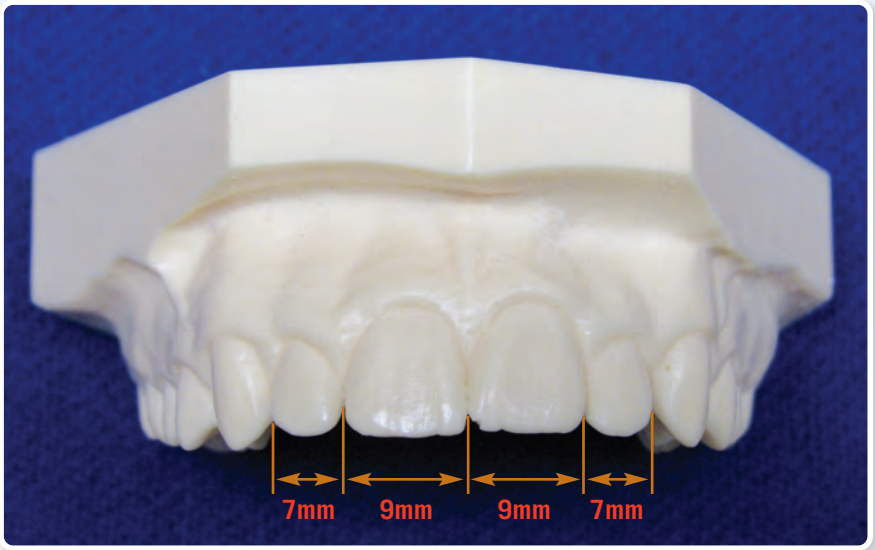
Every patient is different, so how do you know how wide the arches should be? Dr. A. M. Schwarz developed a simple analysis to help determine the proper size of the arches for each patient.

THE SCHWARZ INDEX OR S.I.

To start the Analysis you must first determine the Schwarz Index or S.I. You do this by:

1) Measuring the widest mesial-distal portion of the Upper Laterals and Centrals
2) Add up the totals: Left Lateral + Left Central + Right Central + Right Lateral = S.I.
3) Record the S.I. amount on the Chart

If the Laterals are not fully erupted, you can estimate their size by subtracting 2mm from the width of the Centrals.



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THE "SHOULD BE" MEASUREMENT FOR THE PREMOLARS

Once you have determined the S.I., you will use that number to help determine the ideal arch width in the 1st premolar area. To find the proper width, add 8mm to the S.I. number and record that number on the chart under the "SHOULD BE" Column. This will tell you how wide the arch should be in the 1st premolar area for both arches.

Schwartz Analysis

S.I. = 32 mm 21|12

	SHOULD BE	ACTUAL	DISCREP.
Max Bicuspid S. I. +8	**40**		
Mand Bicuspid S. I. +8	**40**		
Max Molar S. I. +16			
Mand Molar S. I. +16			

THE "SHOULD BE" MEASUREMENT FOR THE MOLARS

The next step is to find the Ideal Arch width for the 1st Molars. To do this add 16mm to the S.I. number and record that number on the chart under the "SHOULD BE" Column. This will tell you how wide the arch should be in the 1st Molar area for both arches.

Schwartz Analysis

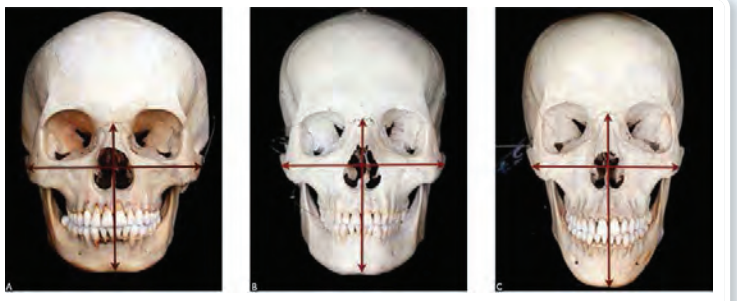
S.I. = 32 mm 21|12

	SHOULD BE	ACTUAL	DISCREP.
Max Bicuspid S. I. +8			
Mand Bicuspid S. I. +8			
Max Molar S. I. +16	**48**		
Mand Molar S. I. +16	**48**		

STANDARD VS FACIALLY ADJUSTED

Adding 8mm to the S.I. is the standard way to determine the "SHOULD BE" amounts. If you would like to personalize this analysis even more, you can factor in the patient's facial type. Instead of adding 8mm for the premolars and 16mm for the molars, you can add the following amounts to compensate for the patients facial type:

EURYPROSOPIC | **MESOPROSOPIC** | **LEPTOPROSOPIC**



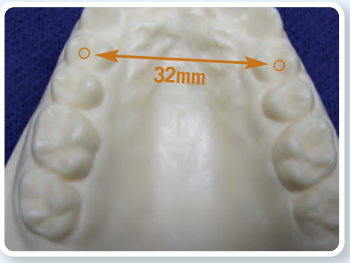
Round
8mm / 16mm

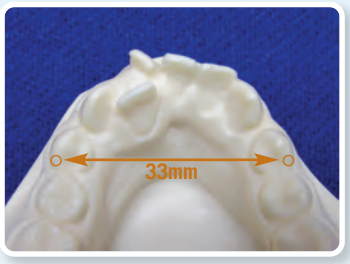
Average
7mm / 14 mm

Long/Narrow
6mm / 12mm

THE "ACTUAL" MEASUREMENT FOR THE PREMOLARS

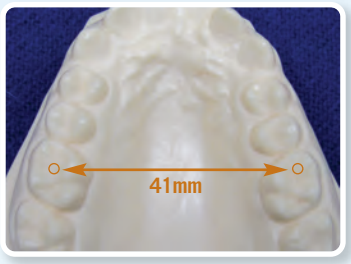
Once you have determined the "SHOULD BE" measurement, the next step is to determine the "ACTUAL" measurement. Start by measuring from the distal pit to the distal pit of the upper 1st premolars and record this measurement on the chart under the ACTUAL Column. On the lower arch measure from the interproximal contact point to the interproximal contact point on the distal of the 1st premolars and record this measurement on the chart under the ACTUAL Column.

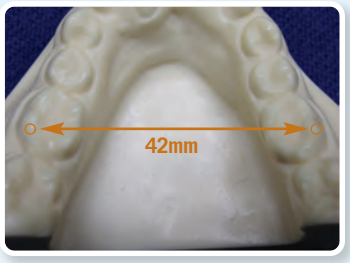




THE "ACTUAL" MEASUREMENT FOR THE MOLARS

The next step is to determine the ACTUAL measurement for the molars. Start by measuring from the Central Fossa to the Central Fossa of the upper 1st molars and record this measurement on the chart under the ACTUAL Column. On the lower arch measure from the Distal Buccal Cusp to the Distal Buccal Cusp on the 1st molars and record this measurement on the chart under the ACTUAL Column.





THE DISCREPENCY

Now that you have determined the SHOULD BE and ACTUAL measurements, you will want to compare them to determine if the arches are deficient and where the deficiencies occur. Start by subtracting the ACTUAL measurement from the SHOULD BE measurement on the chart and record the amount under the DISCREPANCY Column for the Upper and Lower Premolars and Molars.

If the ACTUAL measurement is greater than the SHOULD BE measurement, the arches are wider than ideal. If the SHOULD BE is greater than the ACTUAL measurement then the arches are too narrow in either the Premolar or Molar Area or both, and you would record a negative number in the DISCREPANCY Column.

Schwartz Analysis

S.I. = 32 mm 21|12

	SHOULD BE	ACTUAL	DISCREP.
Max Bicuspid S. I. +8	40	32	-8mm
Mand Bicuspid S. I. +8	40	33	-7mm
Max Molar S. I. +16	48	41	-7mm
Mand Molar S. I. +16	48	42	-6mm

INTERPRETING THE RESULTS

When the ACTUAL is less than the SHOULD BE, expansion is indicated. The amount of the discrepancy will help you determine how much expansion is needed to create an Ideal Arch form and enough room for the tongue and all the permanent teeth.

The discrepancy can also help determine which arch needs expansion or if both arches need it. In many posterior crossbite cases the upper arch will be deficient and the lower arch will be close to ideal, so you may only need to expand the upper arch.

If the discrepancy is less than 4mm, Straightwire may be adequate enough to develop the arches without the need for expansion appliances. If the discrepancy is greater than 4mm, you may want to consider starting the case with expanders to quickly create Ideal Arch Forms and then finishing the case with Straightwire to simply align the teeth.

When the discrepancy is greater than 10mm, you may need a second expansion appliance per arch to gain all of the space that you need. These arches are severely constricted and treatment time is longer and more complex.

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