

PONDS CLT DATA ANALYSIS

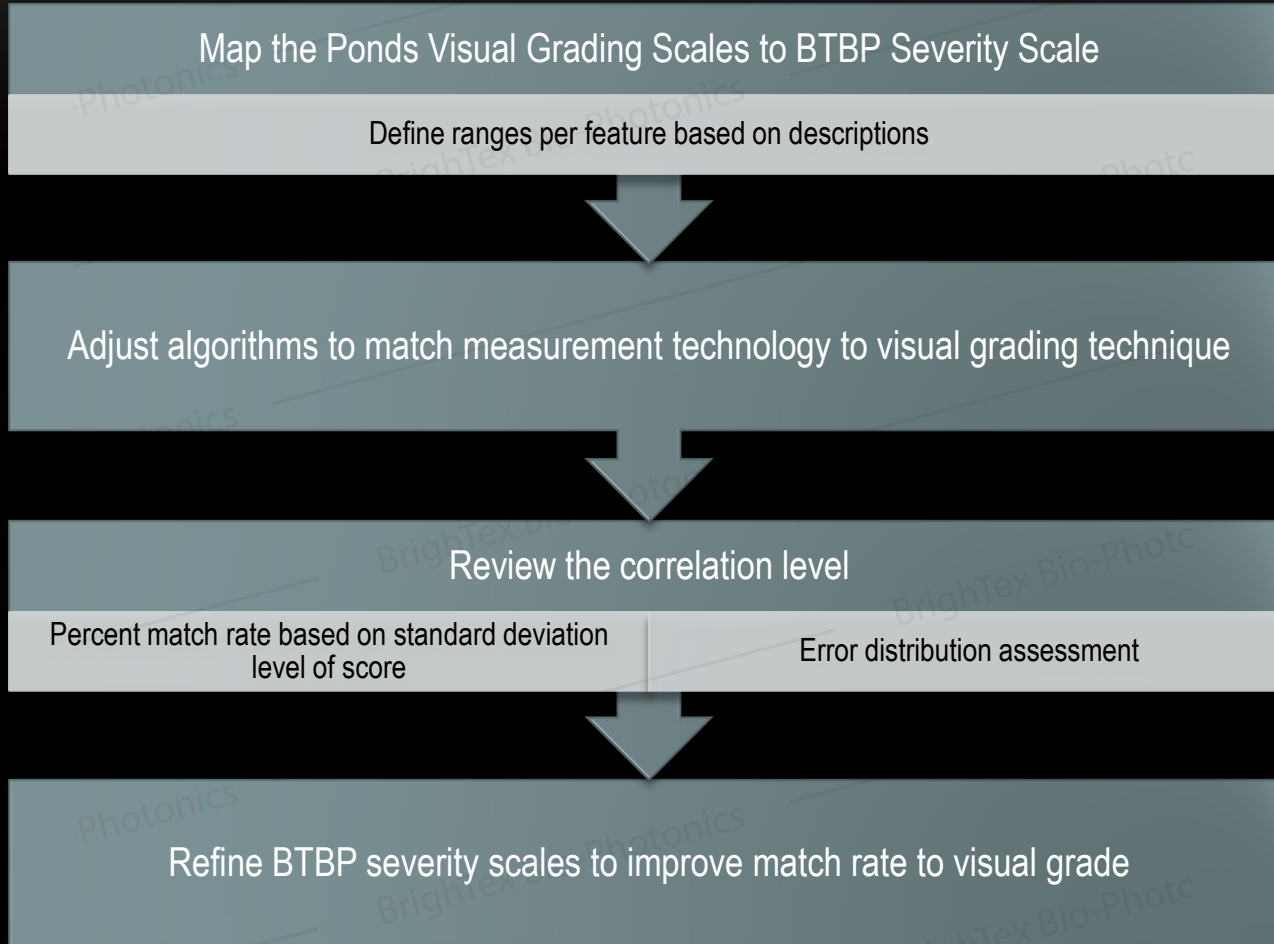
BTBP mobile image analysis correlation to Ponds visual grading

OBJECTIVE

- Assess agreement between the BTBP analysis engine scores and the Ponds CLT visual grading results
- Modify the analysis parameters to align the BTBP measurement technique with the visual grading criteria where necessary
- Map Ponds visual grading scales to BTBP severity ranges for accurate assessment
- Re-analyze the images with the new algorithms and scales
- Review the improved level of correlation

Target Correlation Level > 80% agreement

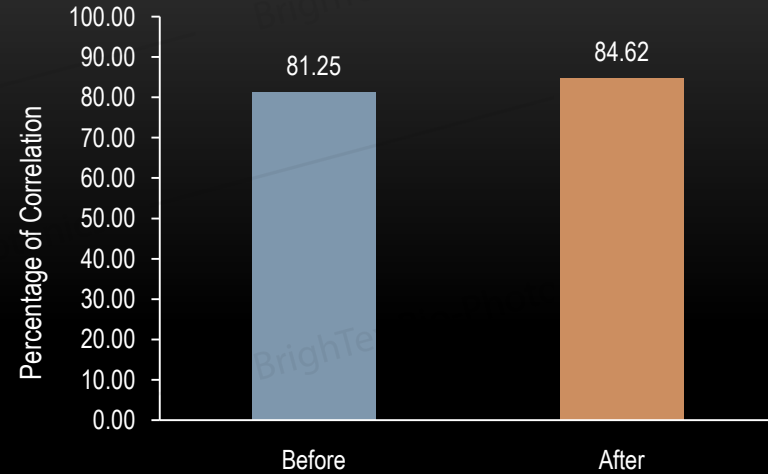
METHODOLOGY



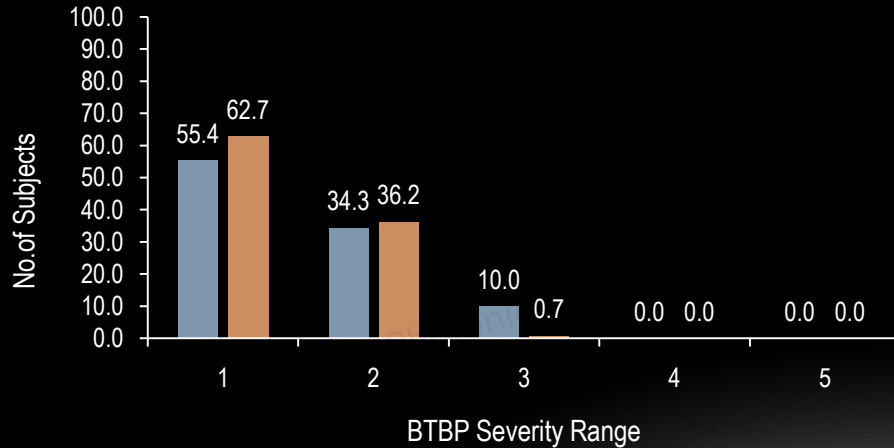
WRINKLES - AVERAGE

The average of the two scores BTBP gets from the under eye and smile line zones were averaged. This figure was then rescaled to match with the Ponds CLT as closely as possible.

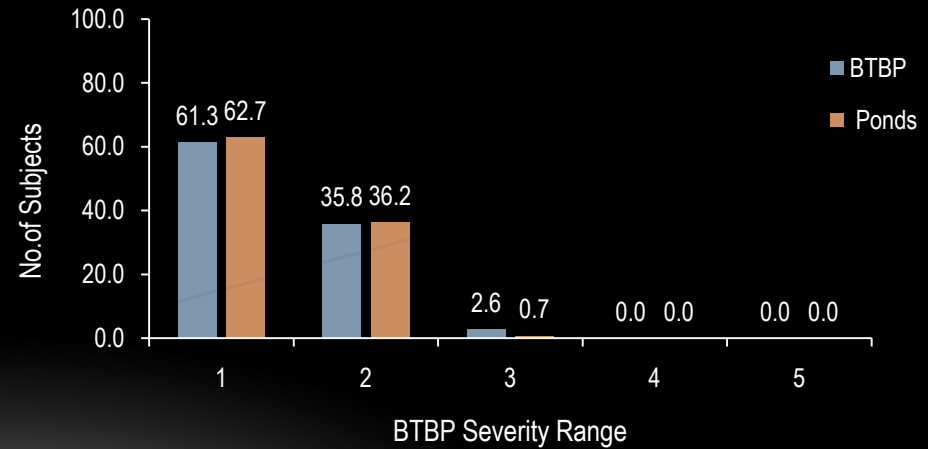
Correlation level for Wrinkles (UE + SL)



% of Distribution - Before

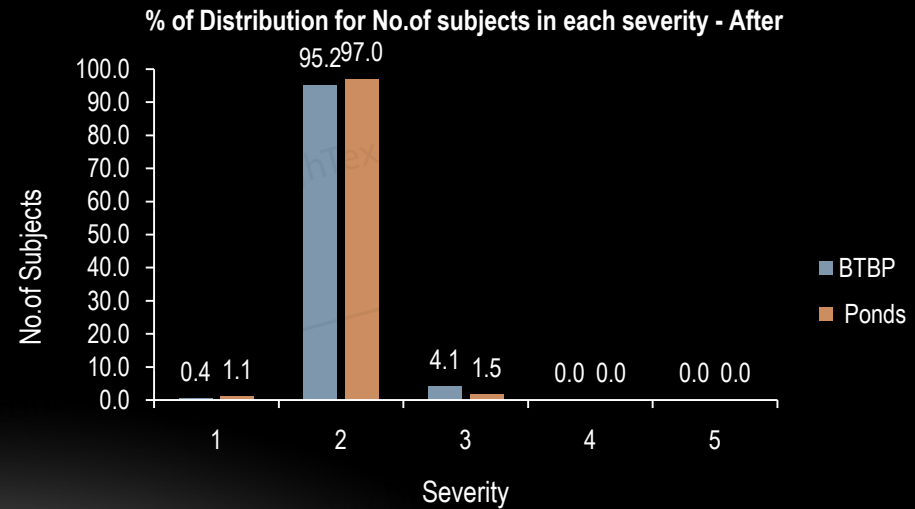
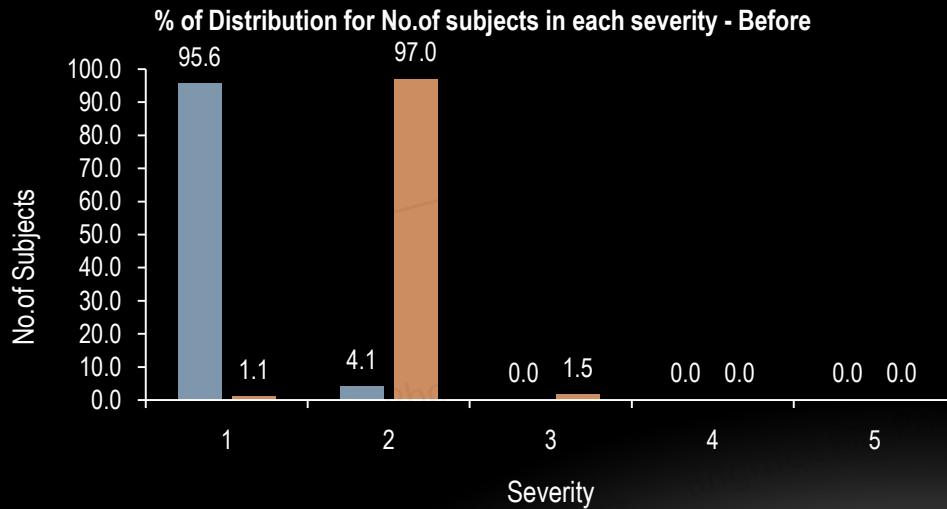
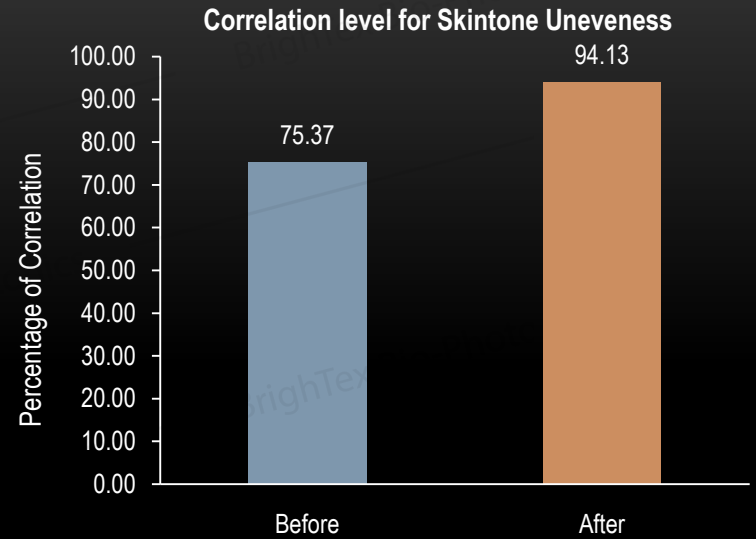


% of Distribution - After



UNEVEN SKIN TONE

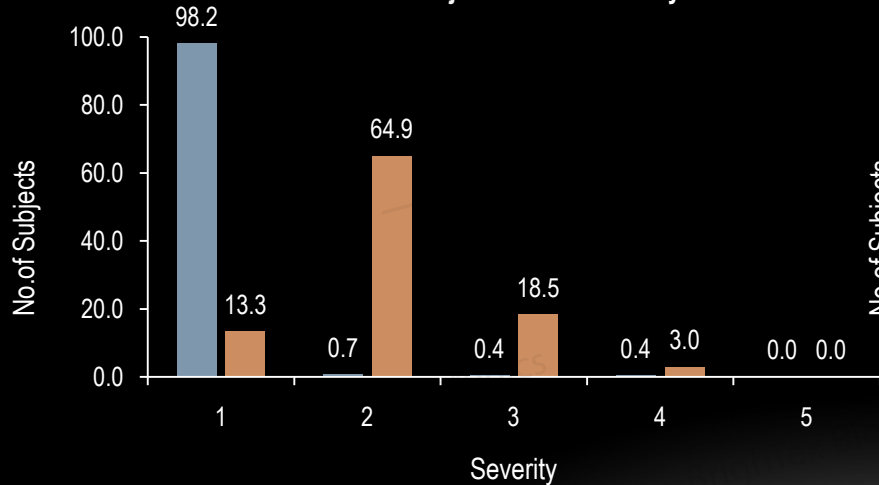
The BTBP score for skin tone unevenness was rescaled to match with the Ponds CLT as closely as possible.



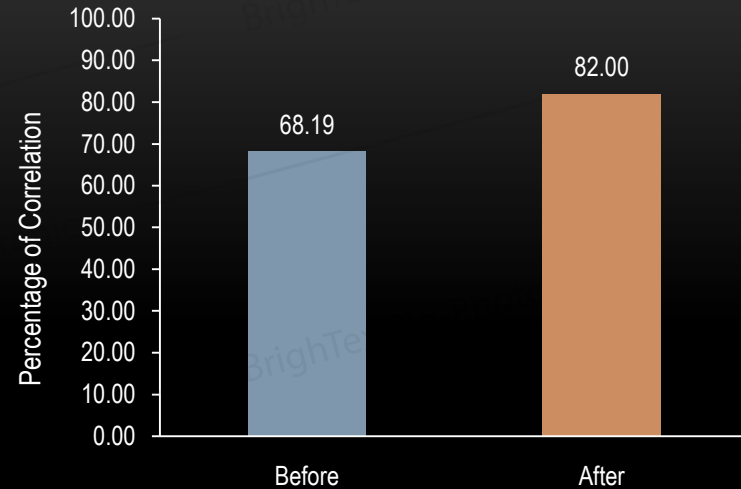
ACNE

The acne algorithm parameters were adjusted to work well on the Ponds CLT images, as well as the large pre-existing dataset that BTBP has of skin-types 1-3. Thresholds related to color, contrast, size and location were all changed to enhance sensitivity, and create a solution that works well across different skin-types and regions. The score was also rescaled to match with the Ponds CLT as closely as possible.

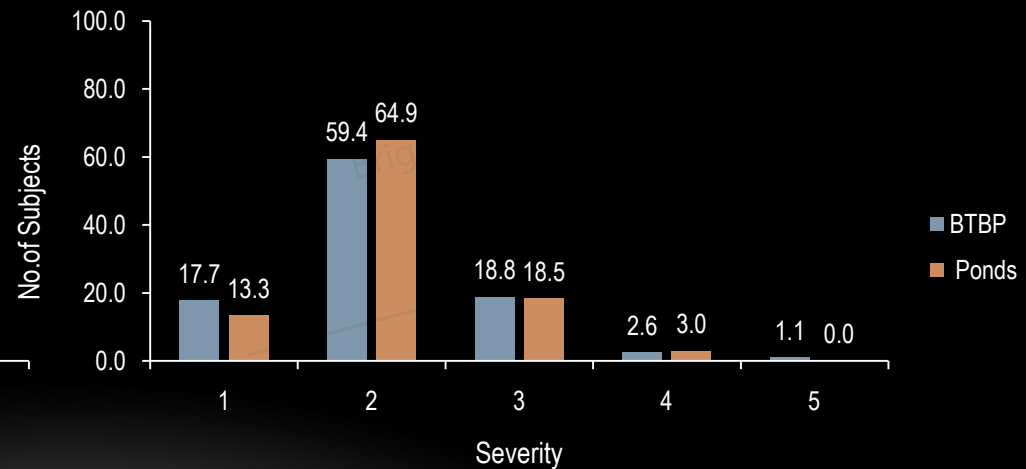
% of Distribution for No.of subjects in each severity - Before



Correlation level for Acne



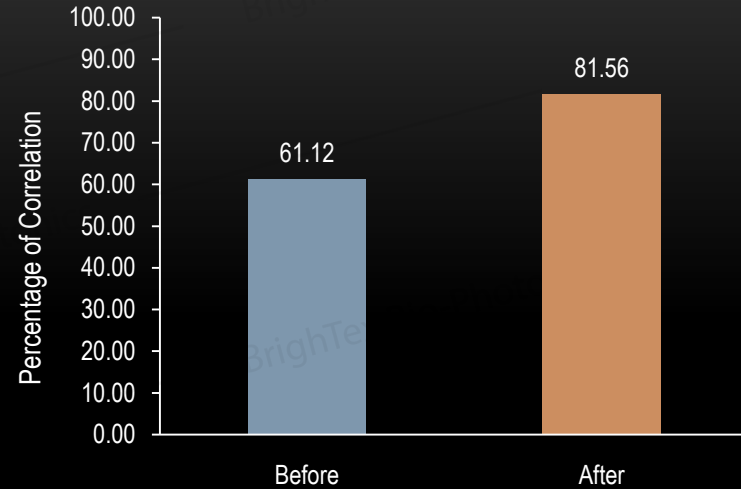
% of Distribution for number of subjects in each severity - After



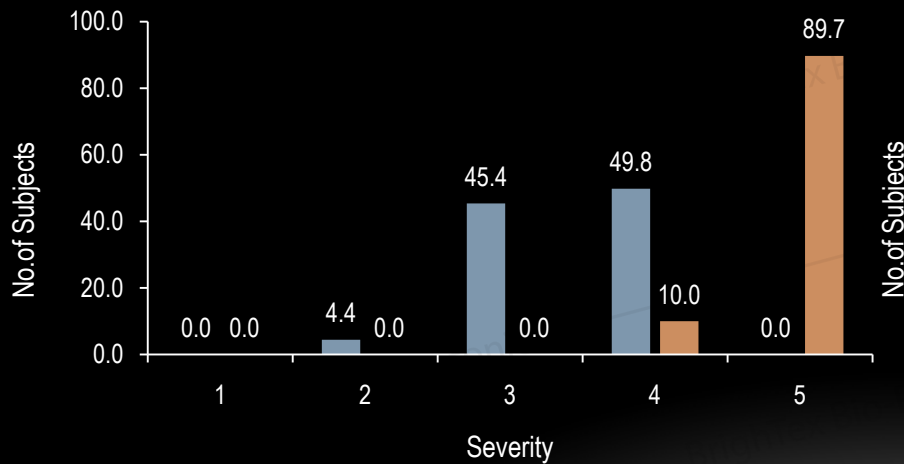
SPOTS

The BTBP score for pigmented spots was rescaled to match with the Ponds CLT as closely as possible.

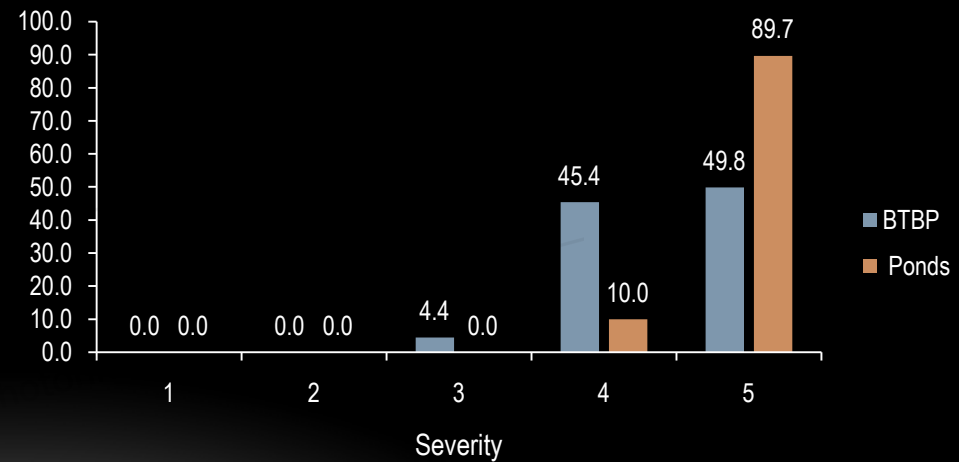
Correlation level for Spots



% of Distribution for No. of subjects in each severity - Before



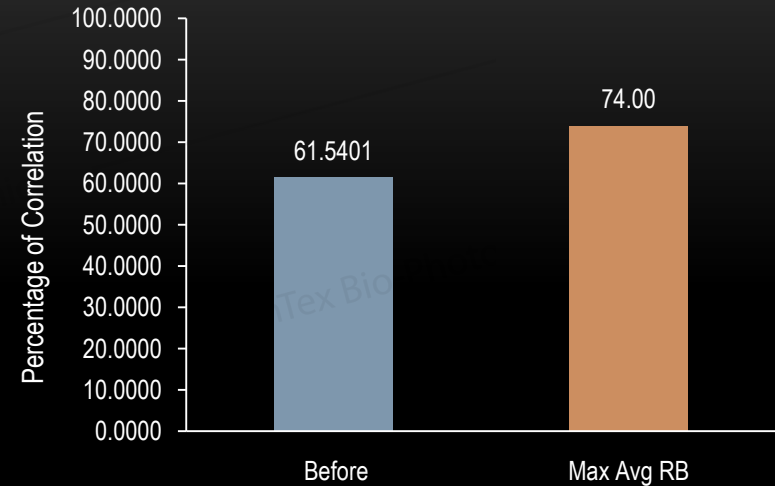
% of Distribution for No. of subjects in each severity - After



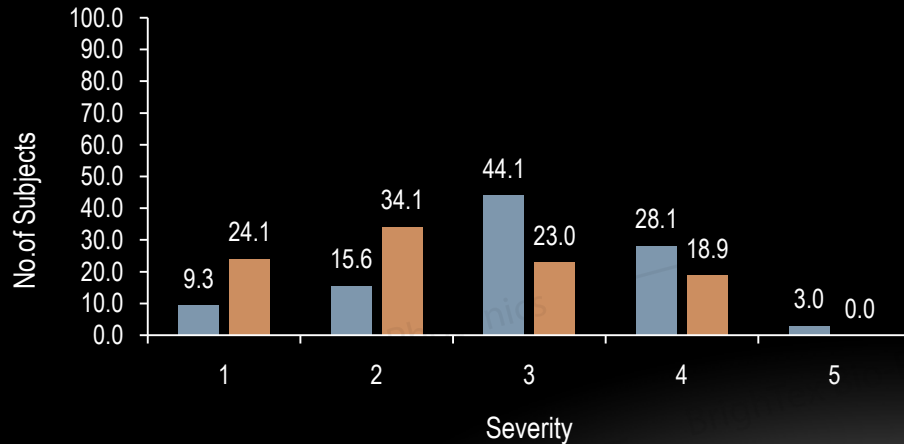
DARK CIRCLES (UNDER EYE)

The method through which BTBP measures under eye dark circles was switched to a different pre-existing algorithm. This method involved measuring the difference between the intensity and color compared to other areas of the face. The score was then rescaled to match with the Ponds CLT as closely as possible.

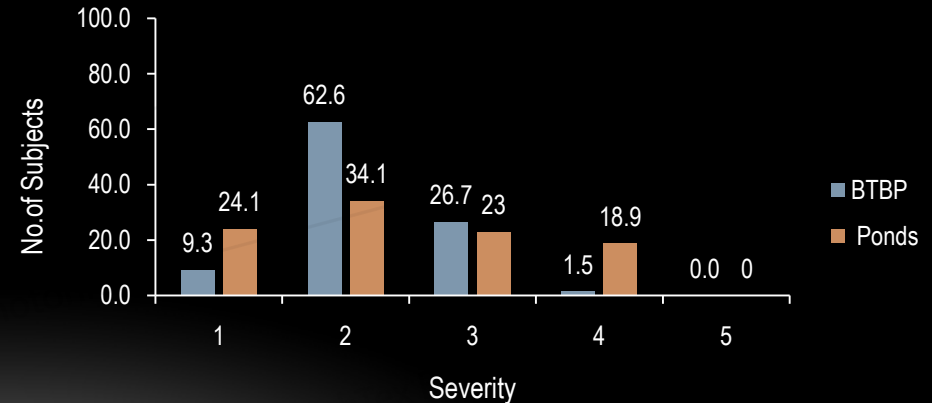
Correlation level for Dark circles



% of Distribution for No. of subjects in each severity - Before



% of Distribution for No. of subjects in each severity - After (Max Avg RB)



OBSERVATIONS

- Under eye dark circles distribution of severity can be brought closer in line with Ponds CLT by balancing the correlation score. We can assess this based on priorities.
- Acne detection has been made significantly more sensitive, allowing BTBP to closely match Ponds CLT scoring. The new image results will be made available today.
- Spot detection was deliberately setup to have a slightly wider spread of severity scoring – but still closely aligns with Ponds VA.
- Skin tone unevenness aligns closely with Ponds CLT, but this causes an uneven distribution. If a greater degree of distribution is desired, this can be adjusted.