

saliva by Drasar et al. (1969) and non fasting specimens by Richardson and Jones (1958) have indicated the presence of a large number of bacterial types. The tendency towards higher or lower counts of organism may be an individual characteristic (Kraus and Gaston, 1956). Saliva plays an important role in the regulation of the oral microflora (Leung 1965). Variation in the number of bacteria occurs at different periods during the day but the number is generally at its maximum in the fasting state (Briody and Gills, 1974).

The present study was conducted to investigate the difference in microbial counts and pH of saliva in fasting and non-fasting individuals.

### Material and Method

Saliva was obtained from sixteen healthy adult subjects. Fasting saliva specimens were collected in sterile screw capped bottles in the morning before breakfast or brushing teeth while the non-fasting samples were taken ninety minutes after breakfast from the same individual. Subjects were instructed not to take anything from the time of breakfast to the time of collection of specimens.

pH of both fasting and non-fasting saliva samples was determined by the pH meter using microelectrodes.

One tenth milliliter of undiluted saliva specimen was streaked onto the surface of the media listed in Table I. Serial ten-fold dilutions of the sample in sterile saline were made and inoculated on the surface of the media. Incubation of the plates was performed according to the period and temperature of incubation mentioned in the table. After incubation representative colonies were picked up and the isolates obtained in pure culture. Bacteria were identified by colony morphology, gram staining and biochemical reactions.

Table 1:

Different Media used for Culture

Organism	Media	Saliva dilution	Incubation
Salt tolerant micrococci	Mannitol Salt Agar	Undiluted	37°C, 48 hours, Aerobic.
	Rogosa S.L. Agar	1, 2, 3.	37°C, 72 hours, Aerobic.
Coliform	MacConkey Agar	Undiluted	37°C, 48 hours, Aerobic.
		1, 2, 3.	Aerobic.
Yeasts	Sabouraud's dextrose Agar	Undiluted	25°C, 72 hours, Aerobic.
		1, 2, 3.	Aerobic.
Streptococci	Blood Agar	1, 2, 3, 4.	37°C, 24 hours, Aerobic.

## BACTERIOLOGICAL STUDY OF HUMAN FASTING AND NONFASTING SALIVA

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### Abstract

Fasting and non-fasting saliva samples were collected from sixteen healthy subjects. pH of fasting saliva was more acidic as compared to non-fasting saliva while the difference in the viable counts between the two groups was found to be insignificant.

### Introduction

Studies conducted on fasting specimen of

### Results

Table II shows the pH of fasting and non fasting saliva of the sixteen subjects. pH of fasting

saliva was more acidic compared to the non fasting saliva. The low standard deviation reflects little variability among the samples studied.

Table II: Comparison of pH of Fasting and Non Fasting Saliva

	Mean	S.D.	Range
Fasting saliva (16)	5.98	0.42	5.3-6.6
Nonfasting saliva (16)	6.01	0.40	5.3-6.6

Table III shows the microbial counts of fasting (F) and non-fasting (N) saliva. Independent T-test were performed for each group and the results were insignificant.

Table III: Difference in Microbial Counts Between Fasting and Non Fasting Saliva

Groups	Specimen	Mean	S.D.	Significance
Streptococci	F	2.53	1.03	$P > .05$
	N	2.65	1.10	
Lactobacilli	F	3.16	1.33	$P > .05$
	N	2.86	1.37	
Yeast	F	1.17	0.23	$P > .05$
	N	2.14	0.16	
Staphylococci	F	2.42	1.30	$P > .05$
	N	2.26	1.40	

## Discussion

pH and viable counts of fasting and non-fasting specimens of saliva were determined. The mean pH of fasting saliva was more acidic as compared to non-fasting saliva. This is in confirmation with studies by Fearn and Zuberi (1977). Culture studies revealed the presence of Streptococci, Lactobacilli, Staphylococci and Yeasts. Similar micro-organisms were isolated by Drasar et al. (1969) in the fasting specimen of saliva while Richardson and Jones (1958) isolated these organisms in nonfasting specimen of saliva. Coliform and Neisseria were not isolated in the present study but were reported by these two authors.

For analysing the difference between the fasting and non-fasting saliva, T-tests was performed and the results were not significant ( $p > .05$ ).

## References

- Briody, B.A. and Gills, R.E. Microbiology and infectious disease. McGraw Hill Book Company, 1974.
- Drasar, B.S., Shiner, M. and McLeod, G.M. (1969) The bacterial flora of the gastrointestinal tract in healthy and achlorhydric persons. Gastroenterology, 56:71.
- Fearn, J. and Zuberi, S.J. (1977) The cultivable bacterial flora of human saliva in fasting, non-fasting subjects. (Unpublished data).
- Kraus, F.W. and Gaston, C. (1956) Individual constancy of numbers among the oral flora. J. Bacteriol., 71:703.
- Leung, S.W. (1965) Saliva in relation to caries. Ann. N.Y. Acad. Sc., 131:Art(2) 795.
- Richardson, R.L. and Jones, M. (1958) A bacteriologic census of human saliva. J. Dent. Res., 37:697.