

# VOLUME-BASED FEEDING CALCULATIONS

## Instructions

- 1** Calculate the total volume goal for a 24hr period (i.e. 6am to 6am each day) using indirect calorimetry (IC), a published predictive equation or a weight-based equation (12-25 kcal/kg/d).
- 2** Calculate the amount already fed to the patient
- 3** Subtract the amount already fed from the total goal volume to get amount of volume needed
- 4** Calculate the hours remaining in the day (time to reach goal)
- 5** Use the chart on the back to divide the volume remaining to achieve goal by the hours remaining to reach goal in that day.

## Example Calculation

**For example, if total volume required for patient is 1200mL of formula, the rate may start at 50mL/hr to provide feeding over 24 hours.**

In this example, however, the patient only receives feeds for 6 hours @50 mL/hr. Then feeding is then held for 4 hours. So the amount already fed is  $6 \times 50 = 300\text{mL}$

**(a) Total Goal Volume** - Already fed Volume  
 $1200\text{ mL} - 300\text{ mL} = 900\text{ mL}$   
(round volume to closest 30 mL)

**(b) Time remaining to reach goal** = 24 hours - Time fed - Hold time  
 $24\text{ hrs} - 6\text{ hrs} - 4\text{ hrs} = 14\text{ hrs}$  (time left to achieve volume)

**(c) Review the chart.**  
The left column lists volume remaining to achieve (not daily goal volume).

Choose 900 mL from the left column, follow over to column 14 (the number of hours remaining to attain goal). Listed is the new hourly feeding rate (64 mL/hr), which will continue until 6am

## Important Nursing Assessment

Volume-based feeding should be used with caution.

Nurses should always assess for gastrointestinal intolerance.

**Examples of intolerance include:** abdominal distention, abdominal cramping, nausea, vomiting, and gastric residuals greater than 500 mL\*\*.

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**Please contact your ICU dietitian if you have any questions.**

\* Hourly rate not to exceed 150 mL/hr

\*\* Sites may customize the gastric residual volume threshold in keeping with their current practice and best available evidence which supports a gastric residual volume  $\leq 500\text{ mL}$ . McClave SA, et al. *JPEN J Parenter Enteral Nutr.* 2016;40(2):159-211. Routine measuring of GRV is not recommended

Please note: The following is not intended as a substitute for medical advice.

# VOLUME-BASED FEEDING SCHEDULE

| Goal total mL formula<br>per 24 hours | HOURS REMAINING IN THE DAY TO FEED 24 HOUR VOLUME |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|---------------------------------------|---------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|                                       | 24                                                | 23  | 22  | 21  | 20  | 19  | 18  | 17  | 16  | 15  | 14  | 13  | 12  | 11  | 10  | 9   | 8   | 7   | 6   | 5   | 4   | 3   | 2   | 1   |
| 2400                                  | 100                                               | 104 | 109 | 114 | 120 | 126 | 133 | 141 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| 2350                                  | 98                                                | 102 | 107 | 112 | 118 | 124 | 131 | 138 | 147 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| 2300                                  | 96                                                | 100 | 105 | 110 | 115 | 121 | 128 | 135 | 144 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| 2250                                  | 94                                                | 98  | 102 | 107 | 113 | 118 | 125 | 132 | 141 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| 2200                                  | 92                                                | 96  | 100 | 105 | 110 | 116 | 122 | 129 | 138 | 147 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| 2150                                  | 90                                                | 93  | 98  | 102 | 108 | 113 | 119 | 126 | 134 | 143 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| 2100                                  | 88                                                | 91  | 95  | 100 | 105 | 111 | 117 | 124 | 131 | 140 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| 2050                                  | 85                                                | 89  | 93  | 98  | 103 | 108 | 114 | 121 | 128 | 137 | 146 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| 2000                                  | 83                                                | 87  | 91  | 95  | 100 | 105 | 111 | 118 | 125 | 133 | 143 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| 1950                                  | 81                                                | 85  | 89  | 93  | 98  | 103 | 108 | 115 | 122 | 130 | 139 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| 1900                                  | 79                                                | 83  | 86  | 90  | 95  | 100 | 106 | 112 | 119 | 127 | 136 | 146 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| 1850                                  | 77                                                | 80  | 84  | 88  | 93  | 97  | 103 | 109 | 116 | 123 | 132 | 142 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| 1800                                  | 75                                                | 78  | 82  | 86  | 90  | 95  | 100 | 106 | 113 | 120 | 129 | 138 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| 1750                                  | 73                                                | 76  | 80  | 83  | 88  | 92  | 97  | 103 | 109 | 117 | 125 | 135 | 146 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| 1700                                  | 71                                                | 74  | 77  | 81  | 85  | 89  | 94  | 100 | 106 | 113 | 121 | 131 | 142 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| 1650                                  | 69                                                | 72  | 75  | 79  | 83  | 87  | 92  | 97  | 103 | 110 | 118 | 127 | 138 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| 1600                                  | 67                                                | 70  | 73  | 76  | 80  | 84  | 89  | 94  | 100 | 107 | 114 | 123 | 133 | 145 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| 1550                                  | 65                                                | 67  | 70  | 74  | 78  | 82  | 86  | 91  | 97  | 103 | 111 | 119 | 129 | 141 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| 1500                                  | 63                                                | 65  | 68  | 71  | 75  | 79  | 83  | 88  | 94  | 100 | 107 | 115 | 125 | 136 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| 1450                                  | 60                                                | 63  | 66  | 69  | 73  | 76  | 81  | 85  | 91  | 97  | 104 | 112 | 121 | 132 | 145 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| 1400                                  | 58                                                | 61  | 64  | 67  | 70  | 74  | 78  | 82  | 88  | 93  | 100 | 108 | 117 | 127 | 140 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| 1350                                  | 56                                                | 59  | 61  | 64  | 68  | 71  | 75  | 79  | 84  | 90  | 96  | 104 | 113 | 123 | 135 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| 1300                                  | 54                                                | 57  | 59  | 62  | 65  | 68  | 72  | 76  | 81  | 87  | 93  | 100 | 108 | 118 | 130 | 144 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| 1250                                  | 52                                                | 54  | 57  | 60  | 63  | 66  | 69  | 74  | 78  | 83  | 89  | 96  | 104 | 114 | 125 | 139 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| 1200                                  | 50                                                | 52  | 55  | 57  | 60  | 63  | 67  | 71  | 75  | 80  | 86  | 92  | 100 | 109 | 120 | 133 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| 1150                                  | 48                                                | 50  | 52  | 55  | 58  | 61  | 64  | 68  | 72  | 77  | 82  | 88  | 96  | 105 | 115 | 128 | 144 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| 1100                                  | 46                                                | 48  | 50  | 52  | 55  | 58  | 61  | 65  | 69  | 73  | 79  | 85  | 92  | 100 | 110 | 122 | 138 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| 1050                                  | 44                                                | 46  | 48  | 50  | 53  | 55  | 58  | 62  | 66  | 70  | 75  | 81  | 88  | 95  | 105 | 117 | 131 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| 1000                                  | 42                                                | 43  | 45  | 48  | 50  | 53  | 56  | 59  | 63  | 67  | 71  | 77  | 83  | 91  | 100 | 111 | 125 | 143 | 150 | 150 | 150 | 150 | 150 | 150 |
| 950                                   | 40                                                | 41  | 43  | 45  | 48  | 50  | 53  | 56  | 59  | 63  | 68  | 73  | 79  | 86  | 95  | 106 | 119 | 136 | 150 | 150 | 150 | 150 | 150 | 150 |
| 900                                   | 38                                                | 39  | 41  | 43  | 45  | 47  | 50  | 53  | 56  | 60  | 64  | 69  | 75  | 82  | 90  | 100 | 113 | 129 | 150 | 150 | 150 | 150 | 150 | 150 |
| 850                                   | 35                                                | 37  | 39  | 40  | 43  | 45  | 47  | 50  | 53  | 57  | 61  | 65  | 71  | 77  | 85  | 94  | 106 | 121 | 142 | 150 | 150 | 150 | 150 | 150 |
| 800                                   | 33                                                | 35  | 36  | 38  | 40  | 42  | 44  | 47  | 50  | 53  | 57  | 62  | 67  | 73  | 80  | 89  | 100 | 114 | 133 | 150 | 150 | 150 | 150 | 150 |
| 750                                   | 31                                                | 33  | 34  | 36  | 38  | 39  | 42  | 44  | 47  | 50  | 54  | 58  | 63  | 68  | 75  | 83  | 94  | 107 | 125 | 150 | 150 | 150 | 150 | 150 |
| 700                                   | 29                                                | 30  | 32  | 33  | 35  | 37  | 39  | 41  | 44  | 47  | 50  | 54  | 58  | 64  | 70  | 78  | 88  | 100 | 117 | 140 | 150 | 150 | 150 | 150 |
| 650                                   | 27                                                | 28  | 30  | 31  | 33  | 34  | 36  | 38  | 41  | 43  | 46  | 50  | 54  | 59  | 65  | 72  | 81  | 93  | 108 | 130 | 150 | 150 | 150 | 150 |
| 600                                   | 25                                                | 26  | 27  | 29  | 30  | 32  | 33  | 35  | 38  | 40  | 43  | 46  | 50  | 55  | 60  | 67  | 75  | 86  | 100 | 120 | 150 | 150 | 150 | 150 |
| 550                                   | 23                                                | 24  | 25  | 26  | 28  | 29  | 31  | 32  | 34  | 37  | 39  | 42  | 46  | 50  | 55  | 61  | 69  | 79  | 92  | 110 | 138 | 150 | 150 | 150 |
| 500                                   | 21                                                | 22  | 23  | 24  | 25  | 26  | 28  | 29  | 31  | 33  | 36  | 38  | 42  | 45  | 50  | 56  | 63  | 71  | 83  | 100 | 125 | 150 | 150 | 150 |

\*Please note: The following is used as part of a volume-based feeding protocol. For additional information see volume-based feeding protocols FEEDME and/or PEPuP. The following is not intended as a substitute for medical advice.