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Medical Nutrition Therapy

Evidence Analysis Systematic Review

Conclusion Statements and Grades



Medical Nutrition Therapy (MNT)

The MNT Systematic Reviews focused on:

- 2015: The effectiveness of RD-provided MNT services
- 2009: The cost-effectiveness of RD-provided MNT services

Academy Definition

What is Evidence-based Dietetics Practice?

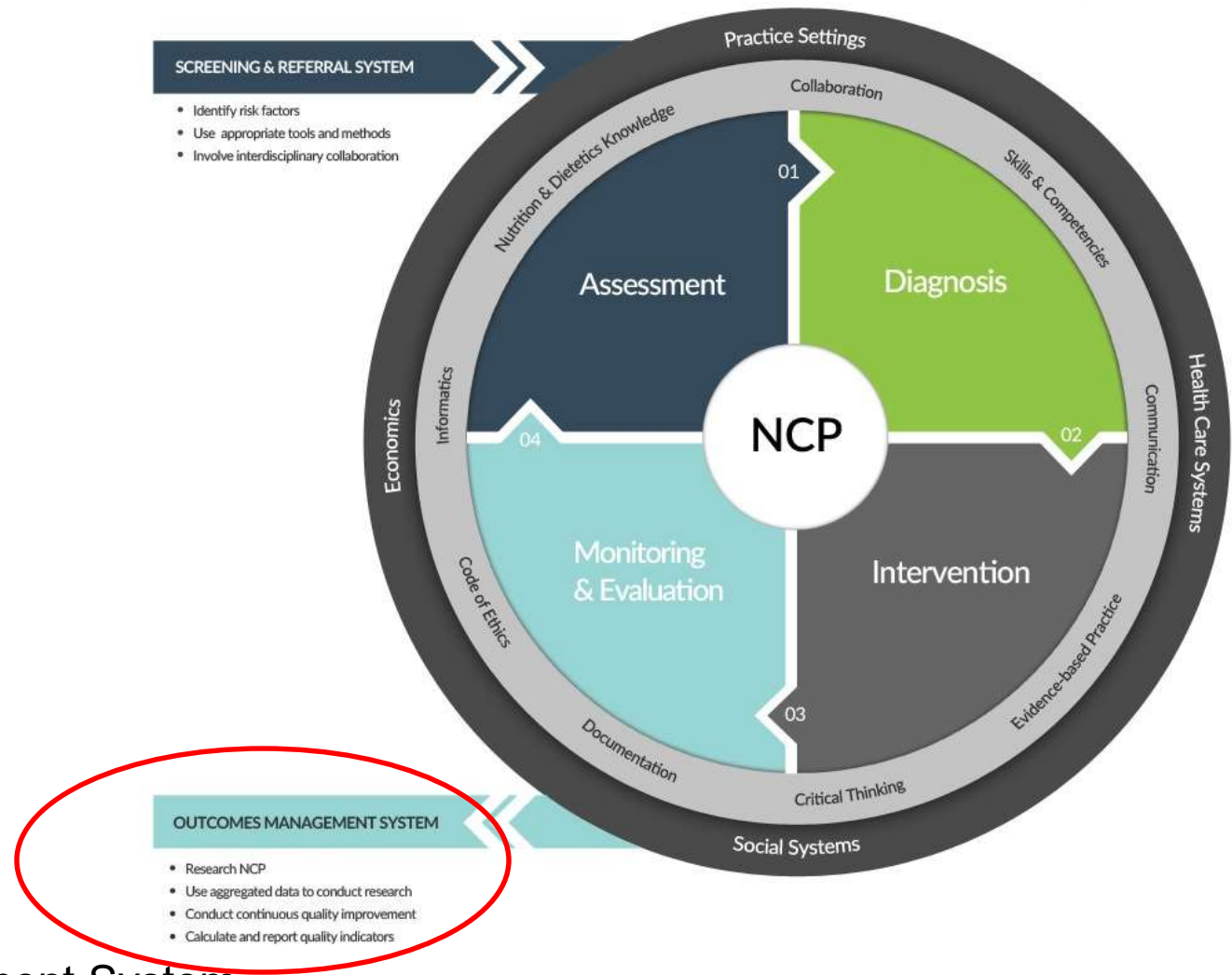
“Evidence-Based *Dietetics Practice* is the use of systematically reviewed scientific evidence in making food and nutrition practice decisions by integrating best available evidence with professional expertise and client values to improve outcomes.”

ADA Scope of Dietetics Practice Framework: Approved by ADA House of Delegates

MNT Objective

Medical Nutrition Therapy (MNT) is a specific application of the Nutrition Care Process in clinical settings that is focused on the management of diseases. MNT involves in-depth individualized nutrition assessment and a duration and frequency of care using the Nutrition Care Process to manage disease.

Nutrition Care Process Model



Outcomes Management System

MNT Topics

The Medical Nutrition Therapy (MNT) Expert Evidence Analysis Workgroups selected the following evidence analysis topics:

2013-2015

- RDN in Medical Team
- Special Needs
- Weight Management
- Disorders of Lipid Metabolism
- Gastrointestinal Disorders

2009

- Comparative Effectiveness of MNT Services
- Cost Effectiveness, Cost-Benefit, or Economic Savings of MNT
- Effectiveness of MNT for:
 - Hypertension
 - Obesity

Rating the MNT data

Using the same procedures implemented by other Academy Evidence Analysis Workgroups, the MNT Effectiveness Workgroup rated the conclusions for each question based on a grading system established by the Academy Research Committee.

Narrative Explanation of Grades

Grade I: Good—The evidence consists of results from studies of strong design for answering the question addressed. The results are both clinically important and consistent with minor exceptions at most. The results are free of serious doubts about generalizability, bias, and flaws in research design. Studies with negative results have sufficiently large sample sizes to have adequate statistical power.

Grade II: Fair—The evidence consists of results from studies of strong design answering the question addressed, but there is uncertainty attached to the conclusion because of inconsistencies among the results from different studies or because of doubts about generalizability, bias, research design flaws, or adequacy of sample size. Alternatively, the evidence consists solely of results from weaker designs for the questions addressed, but the results have been confirmed in separate studies and are consistent with minor exceptions at most.

Grade III: Limited—The evidence consists of results from a limited number of studies of weak design for answering the questions addressed. Evidence from studies of strong design is either unavailable because no studies of strong design have been done or because the studies that have been done are inconclusive due to lack of generalizability, bias, design flaws, or inadequate sample sizes.

Narrative Explanation of Grades

continued

Grade IV: Expert Opinion Only—The support of the conclusion consists solely of the statement of informed medical commentators based on their clinical experience, unsubstantiated by the results of any research studies.

Grade V: Not Assignable—There is no evidence available that directly supports or refutes the conclusion.

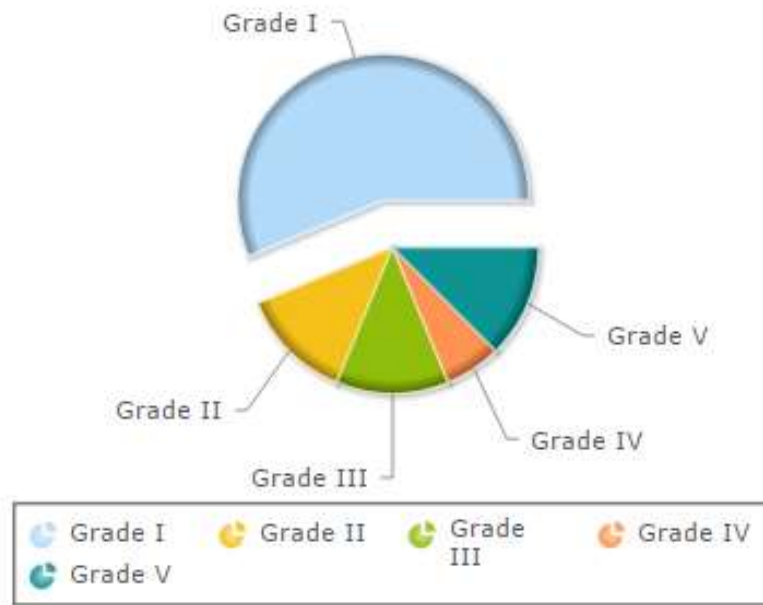
In September 2004, ADA Research Committee adapted this grading system from: *Greer N, Mosser G, Logan G, Wagstrom Halaas G. A practical approach to evidence grading. Jt Comm. J Qual Improv. 2000; 26:700-712.*

Table of Grading Criteria

Strength of Evidence Elements	Grades				
	I Good/Strong	II Fair	III Limited/Weak	IV Expert Opinion Only	V Grade Not Assignable
Quality <ul style="list-style-type: none"> Scientific rigor/validity Considers design and execution 	Studies of strong design for question Free from design flaws, bias and execution problems	Studies of strong design for question with minor methodological concerns, OR Only studies of weaker study design for question	Studies of weak design for answering the question OR Inconclusive findings due to design flaws, bias or execution problems	No studies available Conclusion based on usual practice, expert consensus, clinical experience, opinion, or extrapolation from basic research	No evidence that pertains to question being addressed
Consistency Of findings across studies	Findings generally consistent in direction and size of effect or degree of association, and statistical significance with minor exceptions at most	Inconsistency among results of studies with strong design, OR Consistency with minor exceptions across studies of weaker design	Unexplained inconsistency among results from different studies OR single study unconfirmed by other studies	Conclusion supported solely by statements of informed nutrition or medical commentators	NA
Quantity <ul style="list-style-type: none"> Number of studies Number of subjects in studies 	One to several good quality studies Large number of subjects studied Studies with negative results have sufficiently large sample size for adequate statistical power	Several studies by independent investigators Doubts about adequacy of sample size to avoid Type I and Type II error	Limited number of studies Low number of subjects studied and/or inadequate sample size within studies	Unsubstantiated by published research studies	Relevant studies have not been done
Clinical impact <ul style="list-style-type: none"> Importance of studied outcomes Magnitude of effect 	Studied outcome relates directly to the question Size of effect is clinically meaningful Significant (statistical) difference is large	Some doubt about the statistical or clinical significance of the effect	Studied outcome is an intermediate outcome or surrogate for the true outcome of interest OR Size of effect is small or lacks statistical and/or clinical significance	Objective data unavailable	Indicates area for future research
Generalizability To population of interest	Studied population, intervention and outcomes are free from serious doubts about generalizability	Minor doubts about generalizability	Serious doubts about generalizability due to narrow or different study population, intervention or outcomes studied	Generalizability limited to scope of experience	NA

Medical Nutrition Therapy Grade Chart

69% of MNT questions are rated Grade I (Good) or Grade II (Fair)



Grades are assigned to indicate the overall strength or weakness of evidence informing the conclusion statement.

- Grade I means there is **Good** evidence supporting the statement;
- Grade II is **Fair**;
- Grade III is **Limited**;
- Grade IV is **Expert Opinion**; and
- Grade V is **Not Assignable**.

Additional research is needed to answer questions with a Grade III (12%), Grade IV (6%) or Grade V (13%)

Medical Nutrition Therapy Effectiveness (2013-2015)



MNT: RDN in Medical Team

What is the effectiveness of MNT (i.e., nutrition assessment, counseling and interventions) provided by a Registered Dietitian Nutritionist (RDN), when part of a healthcare team (i.e., transdisciplinary team, multi-disciplinary team)?

Conclusion

Strong evidence supports the effectiveness of nutrition interventions and counseling provided by a nutrition professional (registered dietitian nutritionist or equivalent) when part of a health care team. Compelling evidence from 36 studies supports the multi-disciplinary team approach (including a nutrition professional) to improve weight (-0.3kg to -25.9kg), BMI (-0.5kg/m² to -14.6kg/m²), waist circumference (-1.0cm to -23.5cm), hip circumference (-2.8cm), fasting blood glucose (-1.6mg to -22mg per dL), HbA1c (-0.15% to -6%), fasting insulin (-3.7mcU to -7.7mcU per L), homeostatic model assessment-estimated insulin resistance (HOMA-IR; -1.0 units to -4.0 units), LDL-cholesterol (-6.0mg to -10mg per dL) and HDL-cholesterol (+2.0mg per dL) on a variety of health conditions (i.e., management of weight, eating disorders, diabetes, renal disease, amyotrophic lateral sclerosis (ALS), cardiovascular disease, osteoporosis).

Grade I

MNT: Special Needs

In patients with intellectual disabilities or special needs (including Down Syndrome, Autism Spectrum Disorder, Neural Tube Defects), what is the effectiveness of MNT provided by the Registered Dietitian Nutritionist (RDN) on nutrition-related outcomes (i.e., weight, feeding difficulties, nutrient intake, nutrient deficiencies)?

Conclusion

There is a paucity of research assessing the effectiveness of MNT provided by nutrition professionals (registered dietitian, nutritionist, etc.) for the intellectual disability and special needs population. Only one positive-quality RCT was identified since 1975 meeting this project's inclusion criteria. This study supports the effectiveness of MNT by a registered dietitian nutritionist (RDN) at improving anthropometric outcomes in 20 adolescents with Autism or Down Syndrome. Additional research is required to evaluate the frequency and duration of MNT visits by RDN in patients with intellectual disabilities and special needs population.

Grade IV

MNT: Special Needs

In patients with intellectual disabilities or special needs (including Down Syndrome, Autism Spectrum Disorder, Neural Tube Defects), what is the cost effectiveness of MNT by a Registered Dietitian Nutritionist (RDN) on non-nutrition related outcomes (i.e., hospitalization, medication use, use of health care system, number of medical visits)?

Conclusion

No published research was identified to assess the cost benefit of MNT provided by a Registered Dietitian Nutritionist (RDN) on nutrition-related outcomes for patients with intellectual disabilities or special needs. Future research is required to ascertain the cost effectiveness, benefit or savings of MNT provided by a RDN for this patient population.

Grade V

MNT: Weight Management

In overweight and obese adults, what is the effectiveness of MNT provided by a Registered Dietitian Nutritionist (RDN) on weight management outcomes?

Conclusion

In overweight or obese adults, strong evidence supports the effectiveness of multiple visits (two to 12 visits, 60-minute initial visit and 20- to 45-minute follow-ups) for Medical Nutrition Therapy (MNT) by a nutrition professional (registered dietitian nutritionist or equivalent). Compelling evidence supports improved weight (-0.5kg to -9.0kg), BMI (-0.2kg/m² to -7.8kg/m²), waist circumference (-2.0cm to -14cm), FBG (-5.2mg to -9.5mg per dL), total cholesterol (-4.3mg to -59mg per dL), LDL-cholesterol (-15mg to -47mg per dL), HDL-cholesterol (+2.0mg to +11mg per dL) and triglycerides (-12mg to -60mg per dL).

Grade I

MNT: Weight Management

In overweight and obese adults, what is the cost benefit of MNT provided by a Registered Dietitian Nutritionist (RDN)?

Conclusion

Consistent evidence supports the cost-effectiveness, cost benefit and economic savings of Medical Nutrition Therapy (MNT) provided by a registered dietitian nutritionist (a qualified nutrition professional) in overweight and obese adults. Using a variety of cost-effectiveness analyses, the studies affirm that MNT resulted in improved weight loss and improved quality of life. Continued research is needed on the cost-effectiveness, cost benefit and economic savings of outpatient MNT for weight management.

Grade II

MNT: Disorders of Lipid Metabolism

In outpatient adults, what is the effectiveness of MNT provided by a Registered Dietitian Nutritionist (RDN) to improve disorders of lipid metabolism outcomes?

Conclusion

Strong evidence supports the effectiveness of multiple visits (two to 12 visits; 60-minute initial visit and 20- to 45-minute follow-ups) for Medical Nutrition Therapy (MNT) by a nutrition professional (registered dietitian nutritionist or equivalent) in adults with disorders of lipid metabolism. Evidence showed improved total cholesterol (-2.3mg to -47.9mg per dL), LDL-cholesterol (-6.0mg to -21.7mg per dL), triglycerides (-12mg to -175mg/dL), HLD-cholesterol (+2.0mg to +4.0mg per dL), weight (-4.3kg to -12.6kg), waist circumference (-0.6cm to -9.3cm) and BMI (-0.2kg/m² to -2.6kg/m²). MNT may also result in reductions in need for lipid-lowering medications.

Grade I

MNT: Disorders of Lipid Metabolism

In outpatient adults, what is the cost benefit of MNT provided by a Registered Dietitian Nutritionist (RDN) to improve disorders of lipid metabolism outcomes?

Conclusion

Consistent evidence supports the cost-effectiveness, cost benefit and economic savings of outpatient Medical Nutrition Therapy (MNT) provided by a nutrition professional (registered dietitian nutritionist or equivalent) in patients with disorders of lipid metabolism (three or more MNT visits over six weeks to three months). Using a variety of cost-effectiveness analyses, the studies affirm that MNT resulted in improved clinical outcomes (total cholesterol and LDL-cholesterol, -6% to -13%; triglycerides, -11% to -22%; HDL-cholesterol, +4%; BMI, -4%; quality adjusted life years, +0.75 years to 0.78 years) and lower medication use (savings of \$638 to \$1,456 per year) in patients with disorders of lipid metabolism. Increased time spent with a nutrition professional resulted in greater improvements. Continued research is needed on the cost-effectiveness, cost benefit and economic savings of outpatient MNT for disorders of lipid metabolism.

Grade I

MNT: Gastrointestinal Disorders

In adults with gastrointestinal disorders (i.e., inflammatory bowel syndrome/disease, Crohn's disease, ulcerative colitis), what is the cost benefit of MNT provided by a Registered Dietitian Nutritionist (RDN)?

Conclusion

No published research studies were found on this topic. Future research assessing the cost effectiveness of MNT provided by a nutrition professional (registered dietitian nutritionist or equivalent) to improve gastrointestinal disorder outcomes is imperative.

Grade V

MNT: Gastrointestinal Disorders

In adults with gastrointestinal disorders (i.e., celiac disease, inflammatory bowel syndrome/disease, Crohn's disease, ulcerative colitis), what is the effectiveness of MNT provided by a Registered Dietitian Nutritionist (RDN) on health outcomes (i.e., weight status, GI distress, nutrient deficiencies)?

Conclusion

Evidence suggests that patients with celiac disease who received MNT by a nutrition professional (registered dietitian nutritionist or equivalent) had increased adherence to the GF diet, reduced gastrointestinal distress, improved intestinal villous atrophy and improved BMI, although the extent of positive outcomes varied among the studies. Additional research is required. No conclusions could be drawn about the optimal frequency, duration of nutrition professional (RDN or equivalent) visits or MNT effectiveness for other gastrointestinal disorders.

Grade III

**Medical Nutrition
Therapy –
Comparative
Effectiveness and
Cost Effectiveness
(2009)**



MNT: Comparative Effectiveness of MNT Services

What is the evidence to support effectiveness of MNT provided by an RD compared with other healthcare professionals who provide nutrition interventions (doctors, nurses, health coaches, etc.)?

Conclusion

Five studies were reviewed to evaluate the effectiveness of Medical Nutrition Therapy (MNT) provided by a registered dietitian, when compared with other healthcare professionals who provide nutrition interventions in the same study. The only studies comparing providers were in the area of hyperlipidemia: These studies report inconclusive findings due to variations in nature and length of the interventions and outcome measures. Further research utilizing comparable interventions on consistent outcomes over longer time periods is needed, as well as research in other disease states and compared with other healthcare professionals.

Grade III

MNT: Comparative Effectiveness of MNT Services

What is the evidence to support effectiveness of nutrition interventions and counseling provided by an RD when part of a healthcare team?

Conclusion

Nine studies demonstrate that the inclusion of nutrition interventions and counseling, when provided by a registered dietitian as part of a healthcare team, resulted in significant improvements in weight and BMI, A1C, blood pressure and serum lipids. The majority of these studies took place in primary care settings.

Grade I

MNT Health Care Economics and Terminology

Economic analyses, including cost utility, cost effectiveness and cost benefit analyses, evaluate which program or intervention has the greatest effect at the lowest cost. Costs of the intervention are described in monetary terms. Effects or benefits of the intervention can be expressed as either costs (as in cost-benefit analysis) or as health outcomes, such as cases of a disease prevented, years of life gained, quality-adjusted life years (QALYs), or changes in intermediate outcomes (e.g. mg/dL). The variety of ways that cost studies present their outcomes makes it a challenge to compare studies. Economic studies derived from clinical trial data are stronger than model-based analyses, but models can help with economic predicting when trial data are not available. Cost analyses vary by the perspective (i.e., societal, health system) which determines of what type of costs (i.e., direct, indirect, cost to patient) are included in the analysis.

While no standard definition exists for the evaluation of interventions, it has been suggested that interventions which cost less than \$20,000 per quality-adjusted life-year (QALY) are appropriate ways to use resources, those that cost \$20,000-\$100,000 per QALY are probably appropriate, and those that cost more than \$100,000 per QALY may not be an appropriate way to use resources.

(Urbanski P, Wolf AM, Herman WH. Cost effectiveness issues of diabetes prevention and treatment. *Newsflash*. 2008;29(1):17-19.

MNT: Cost-Effectiveness

What is the evidence to support the cost-effectiveness, cost benefit or economic savings of inpatient MNT services provided by an RD?

Conclusion

Five studies were reviewed to evaluate the cost-effectiveness, cost benefit, and/or economic savings of inpatient Medical Nutrition Therapy services provided by a Registered Dietitian. Three studies report that nutrition screening, early assessment and treatment by a Registered Dietitian, and early discharge result in cost savings due to reduced length of hospital stay. Two studies demonstrate that appropriate use of parenteral nutrition results in cost savings related to laboratory monitoring, central line placement and maintenance care, nursing administration, pharmacy and dietitian clinical management, and/or the avoidance of catheter-related sepsis. More in-depth cost analyses of inpatient Medical Nutrition Therapy services provided by a Registered Dietitian are needed.

Grade II

MNT: Cost-Effectiveness

What is the evidence to support the cost-effectiveness, cost benefit or economic savings of outpatient MNT services provided by an RD?

Conclusion

Ten studies were reviewed to evaluate the cost-effectiveness, cost benefit and economic savings of outpatient Medical Nutrition Therapy (MNT), involving in-depth individualized nutrition assessment and a duration and frequency of care using the Nutrition Care Process to manage disease. Using a variety of cost-effectiveness analyses, the studies affirm that MNT resulted in improved clinical outcomes and reduced costs related to physician time, medication use and/or hospital admissions for people with obesity, diabetes and disorders of lipid metabolism, as well as other chronic diseases. Further research is needed on the cost-effectiveness, cost benefit and economic savings of outpatient MNT in other disease states.

Grade I

MNT: Cost-Effectiveness

What is the evidence to support the cost-effectiveness, cost benefit or economic savings of lifestyle interventions for diabetes prevention?

Conclusion

Compared with pharmacotherapy or no intervention, lifestyle interventions for diabetes prevention were cost-effective in terms of cost per quality-adjusted life years gained, based on six cost-effectiveness analyses.

Grade I

MNT: Effectiveness of MNT for Hypertension (HTN)

What is the evidence to support effectiveness of MNT provided by a Registered Dietitian for hypertension in adults?

Conclusion

Medical nutrition therapy (MNT) provided by a Registered Dietitian lowers blood pressure in adults with hypertension. Three studies regarding the effectiveness of medical nutrition therapy for under six months reported significant reductions in blood pressure of approximately five mm Hg for both systolic and diastolic blood pressure. Five studies regarding the effectiveness of MNT from six to twelve months reported similar significant reductions in blood pressure. Five studies report sustained reductions in blood pressure beyond one year. In these studies, both individual and group sessions were employed over an average of nine sessions.

Grade I

MNT: Effectiveness of MNT for Obesity

What is the evidence to support effectiveness of MNT provided by a Registered Dietitian for overweight/obesity in otherwise healthy adults?

Conclusion

Medical nutrition therapy (MNT) provided by a Registered Dietitian results in both statistically and clinically significant weight loss in otherwise healthy overweight and obese adults. Four studies regarding the effectiveness of medical nutrition therapy for under six months reported significant weight losses of approximately one to two pounds per week. Four studies regarding the effectiveness of MNT from six to twelve months reported significant mean weight losses of up to 10% of body weight. Four studies report maintenance of this weight loss beyond one year. In these studies, both individual and group sessions were employed with weekly and monthly sessions.

Grade I



Medical Nutrition Therapy Effectiveness for Various Diseases / Health Conditions

MNT and Diabetes (2015)

In adults with type 1 and type 2 diabetes, how effective is MNT provided by an RD/RDN on glycemia (A1C or glucose)?

Conclusion

In adults with type 2 diabetes, 21 study arms from 18 studies reported that MNT provided by RDNs significantly lowered HbA1c levels. At three months, HbA1c levels decreased by 0.3% to 2.0% and with ongoing MNT support decreases in HbA1c levels were maintained or improved for more than 12 months. An initial series of RDN encounters (three to 11; a total of two to 16 hours) with continued RDN encounters throughout the studies were reported. Although nutrition therapy interventions were effective throughout disease duration, the decrease in HbA1c was largest in studies in which participants were newly diagnosed or had higher baseline HbA1c levels. RDNs implemented a variety of nutrition therapy interventions all resulting in a reduced energy intake.

In adults with type 1 diabetes, three studies reported that MNT provided by RDNs contributed to significantly decreased HbA1c levels. At six months, HbA1c levels decreased by 1.0% to 1.9%. An initial series of RDN encounters (four to six) were reported. Ongoing MNT support resulted in maintenance of the reduced HbA1c levels at one year and in the Diabetes Control and Complications Trial (DCCT) throughout the 6.5 years of the trial.

In adults with type 1 and type 2 diabetes, nine studies reported that MNT provided by RDNs decreased fasting blood glucose levels at three months by 18mg to 61mg per dL. With ongoing MNT support, decreased levels were maintained to 12 months and in the DCCT throughout the 6.5 years of the trial.

Grade I

MNT and Diabetes (2015)

In adults with type 1 and type 2 diabetes, what impact does MNT provided by an RD/RDN have on medication usage (insulin or other glucose-lowering medications)?

Conclusion

In adults with type 2 diabetes, 12 study arms from 11 studies reported that MNT provided by RDNs resulted in decreases in doses or the number of glucose-lowering medications used. An initial series of RDN encounters (three to 10; a total two to six hours) with continued RDN encounters throughout the studies were reported. The United Kingdom Prospective Diabetes Study (UKPDS) reported significantly improved glucose outcomes for approximately two years. However, due to the normal progression of type 2 diabetes, additional medications were needed to achieve optimal glycemic control. Weight gain with medication use can be ameliorated by an intensive intervention provided by RDNs.

In two studies of adults with type 1 diabetes, RDNs implemented carbohydrate-counting for the adjustment of pre-meal insulin doses. In both studies, a series of RDN encounters (four to six) were reported. Although the number of insulin injections increased, HbA1c improved without an increase in total insulin doses.

Grade I

MNT and Diabetes (2015)

In adults with type 1 and type 2 diabetes, how effective is MNT provided by an RD/RDN on CVD risk factors (lipids or blood pressure)?

Conclusion

In adults with type 2 diabetes and normal to mildly elevated cholesterol levels, 19 study arms in 16 studies reported that MNT provided by RDNs had mixed effects on cholesterol levels. Eight study arms reported significant decreases in cholesterol ranging from eight mg to 28mg per dL.

In adults with type 2 diabetes and normal to mildly elevated LDL-cholesterol levels, 17 study arms in 15 studies reported that MNT provided by RDNs had mixed effects on LDL-cholesterol levels. Seven study arms reported significant decreases in LDL-cholesterol ranging from eight mg to 22mg per dL.

In adults with type 2 diabetes and normal to mildly low HDL-cholesterol levels, 19 study arms in 16 studies reported that MNT provided by RDNs had mixed effects on HDL-cholesterol levels. Three studies reported significant increases in HDL-cholesterol ranging from 2.4mg to six mg per dL.

In adults with type 2 diabetes and normal to elevated triglyceride levels, 19 study arms in 16 studies reported that MNT provided by RDNs had mixed effects on triglyceride levels. Seven study arms reported significant decreases in triglycerides ranging from 15mg to 153mg per dL.

In adults with type 2 diabetes and with near-normal blood pressure levels, 12 study arms in 10 studies reported that MNT provided by RDNs had mixed effects on blood pressure levels. Seven study arms reported significant decreases in systolic and diastolic blood pressure of 3.2 to 9.0mmHg/2.5 to 5.3mmHg.

In adults with type 1 diabetes and near normal lipid and blood pressure levels, two studies reported that MNT provided by RDNs led to non-significant changes in total cholesterol, HDL-cholesterol, triglycerides and blood pressure. The Diabetes Control and Complications Trial (DCCT) at five years, reported that LDL-cholesterol was significantly decreased. Subjects did not have or were not described as having any disorders of lipid metabolism or hypertension. The effectiveness of MNT may have been confounded by lipid-lowering or anti-hypertensive medications. Additional long-term studies are needed to ascertain the effectiveness of MNT on lipid profiles and blood pressure in adults with diabetes and disorders of lipid metabolism and hypertension.

Grade I

MNT and Diabetes (2015)

In adults with type 1 and type 2 diabetes, how effective is MNT provided by an RD/RDN on quality of life?

Conclusion

In six studies in which RDNs implemented MNT, improvements in quality of life were reported. An initial series of three to six RDN encounters (2.5 hours to six hours) with long-term RDN encounters were reported.

Grade I

MNT and Diabetes (2015)

In adults with type 1 and type 2 diabetes, how effective is MNT provided by an RD/RDN on weight management (pounds, waist circumference or BMI)?

Conclusion

In adults with type 2 diabetes, body weight outcomes from MNT provided by RDNs were mixed. At study end, 11 study arms reported MNT provided by RDNs significantly decreased baseline body weights by 2.4kg to 6.2kg, whereas six study arms reported non-significant weight changes at study end. In persons with type 1 diabetes, weight outcomes were also mixed.

In adults with type 2 diabetes, body mass index (BMI) outcomes from MNT provided by RDNs were mixed. At study end, nine study arms reported significant decreases in baseline BMIs by 0.3kg/m² to 2.1kg/m², whereas eight study arms reported non-significant changes in BMI at study end. In persons with type 1 diabetes, one study reported a significantly decreased BMI of 0.3kg/m² from MNT provided by RDNs.

In adults with type 2 diabetes, waist circumference outcomes from MNT provided by RDNs were mixed. At study end, nine study arms reported decreases of 1.0cm to 5.5cm, whereas three study arms reported non-significant changes in waist circumference at study end. In persons with type 1 diabetes, one study reported a significantly decreased waist circumference of one cm from MNT provided by RDNs.

Grade II

MNT and Gestational Diabetes (2008)

What is the evidence regarding Medical Nutrition Therapy on pregnancy outcomes (morbidity, birth weight, glucose control, pharmacological therapy, pre-term delivery, satisfaction with care) in women with gestational diabetes?

Conclusion

Six studies were evaluated to investigate the relationship between Medical Nutrition Therapy on pregnancy outcomes in women with gestational diabetes mellitus. Medical Nutrition Therapy, initiated within one week of diagnosis and with a minimum of three nutrition visits, results in decreased hospital admissions and insulin use, improves likelihood of normal fetal and placental growth, and reduces risk of perinatal complications, especially when diagnosed and treated early.

Grade I

MNT and Heart Failure (2006)

For optimum management of a patient with heart failure, what is the benefit of individualized medical nutrition therapy provided by a registered dietitian?

Conclusion

Three studies that examined the impact of RD-led dietary intervention for heart failure patients found that with two or more visits, patients reported reductions in sodium and fluid intake and improvements in quality of life. One study found a reduction in urinary sodium excretion, extra-cellular water, edema and fatigue and increases in physical activity. Two studies reported RD-led interventions involved an initial planned visit that lasted 45 minutes and follow-up visits lasting 30 minutes over a six-week to nine-month time period. Data on long-term adherence and sustained diet and physiological responses are unavailable. The optimal duration and frequency of follow-up visits by a RD is not known.

Grade II

MNT and HIV/AIDS (2009)

What is the evidence regarding medical nutrition therapy for people with HIV infection?

Conclusion

Seven studies were evaluated regarding medical nutrition therapy (MNT) and/or nutrition counseling in people with HIV infection. One study, completed prior to highly active antiretroviral therapy, stressed that early intervention may prevent progressive weight loss. Four studies regarding MNT reported improved outcomes related to energy intake and/or symptoms (with or without oral nutritional supplementation) and cardiovascular risk indices, especially with increased frequency of visits. Two studies regarding nutritional counseling (non-MNT) also reported improved outcomes related to weight gain, CD4 count and quality of life.

Grade I

MNT and Hypertension (2015)

In persons with hypertension, how effective is Medical Nutrition Therapy provided by a registered dietitian nutritionist compared to no or other interventions on blood pressure?

Conclusion

Medical nutrition therapy (MNT) provided by a registered dietitian nutritionist (RDN) using individual or group sessions reduces blood pressure (BP) in persons with hypertension or pre-hypertension. Six studies reported reductions in systolic blood pressure (SBP) up to 10mmHg and in diastolic blood pressure (DBP) up to 6.0mmHg after one to three months of MNT provided at least every other week for at least three sessions. Four studies reported similar significant reductions in BP from six to twelve months when MNT was provided at least monthly or with follow-up provided after five or more sessions. Five studies report sustained reductions for up to four years with MNT provided at least two to three times per year.

Grade I

MNT and Oncology (2011)

Is medical nutrition therapy (MNT) provided by a nutrition professional effective in adult oncology patients receiving chemotherapy treatment?

Conclusion

Medical nutrition therapy provided by a nutrition professional was effective in improving multiple treatment outcomes in adult oncology patients receiving chemotherapy. Six studies, mostly international, examined patients with a variety of cancers (breast, ovary, lung, leukemias, colorectal, upper GI) prior to receiving chemotherapy in ambulatory and inpatient oncology centers.

Grade II

MNT and Oncology (2011)

Is medical nutrition therapy (MNT) provided by a nutrition professional as part of multi-modal therapy effective in adult oncology patients receiving chemotherapy treatment?

Conclusion

Medical nutrition therapy provided by a registered dietitian (RD), as part of multi-modal therapy, was found to be effective in improving outcomes in adult breast cancer patients receiving chemotherapy treatment. Although all cancers were included in the search strategy, only one study of breast cancer patients met inclusion criteria.

Grade III

MNT and Oncology (2011)

Is medical nutrition therapy (MNT) provided by a nutrition professional effective in adult oncology patients receiving radiation treatment?

Conclusion

Medical nutrition therapy provided by a nutrition professional was effective in improving multiple treatment outcomes. 11 studies, mostly international, examined patients with a variety of high-risk cancers (head and neck, gastrointestinal) prior to receiving radiotherapy or combined radiotherapy in ambulatory and inpatient oncology centers.

Grade I

MNT and Oncology (2011)

Is medical nutrition therapy (MNT) provided by a nutrition professional as part of multi-modal therapy effective in adult oncology patients receiving radiation treatment?

Conclusion

Three studies found that MNT provided by a registered dietitian (RD), as part of multi-modal therapy, was effective in improving outcomes in adult oncology patients receiving radiation treatment.

Grade II

Acknowledgements

Project Team (2015)

Workgroup Members

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Project Team (2009)

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- Sharon Stall, MPH, CSR (resigned January 2009)

No Implied Endorsement

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